



Presentato dalla parte del
S. George Field dalla mano
di Miss Anne Sutherland
14^a Dicembre 1857.

J. L. 352

15. B. 2. 352

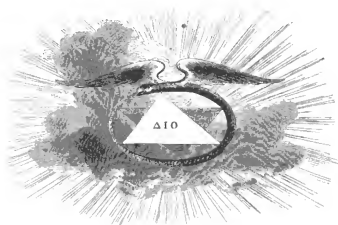
2000

THE
LOGIC OF ANALOGY.

THE
ANALOGY OF LOGIC,
AND
LOGIC OF ANALOGY;
OR,
THE THIRD ORGAN
PROPOSED.

By G. FIELD,

AUTHOR OF "OUTLINES OF ANALOGICAL PHILOSOPHY," "CHROMATICS, OR THE
ANALOGY, HARMONY, AND PHILOSOPHY OF COLOURS," ETC.



LONDON :
DAVID BOGUE, FLEET STREET.
MDCCL.

•

•

LONDON:
Printed by G. BARCLAY, Castle St. Leicester Sq.

TO

WILLIAM CHAPMAN BEGLEY, A.M. M.D.

MY DEAR SIR,

THAT an author should address a work on a subject which has been called the *Medicine of the mind*, to one who has long and successfully devoted his skill and talents to *remedy its Diseases*, will not, I trust, be deemed inconsistent. I have, therefore, ventured to dedicate this work to you, as an offering of friendship, and as a testimony of the respect and affection with which I am,

My dear Sir,

Faithfully yours,

THE AUTHOR.

The Cottage, Syon Hill Park,
1850.

CONTENTS.

	Page
<u>INTRODUCTION</u> - - - - -	1
<u>Sect. 1. The Universal Importance of Logic</u> -	9
2. Its Rise and Progress - - -	10
3. Its Modern Career - - -	18
4. Its Scope and Plan - - -	28

PART I.

PHILOLOGY.

<u>Chap. i. Introduction</u> - - - -	37
ii. <u>Philology</u> - - - -	51
iii. <u>sect. 1. Semiotics—<i>Letters</i></u> - - -	57
2. <u>Accentuation</u> - - - -	71
3. <u>Punctuation</u> - - - -	72
iv. <u>Grammar—<i>Words</i></u> - - - -	76
v. <u>sect. 1. Syntaxis—<i>Propositions</i></u> - - -	104
2. <u>Rhetoric</u> - - - -	116
3. <u>Poetry</u> - - - -	125
4. <u>Style—<i>Composition</i></u> - - - -	130

PART II.

NOOLOGY.

Chap.				Page
i.	sect. 1.	Introduction	- - -	<u>151</u>
		2. Consciousness	- - -	156
		3. Volition	- - -	159
		4. Understanding	- - -	170
ii.	sect. 1.	Logical Science	- - -	177
		2. Logical Faculties	- - -	179
		3. Memory	- - -	184
		4. Imagination	- - -	195
		5. Reason	- - -	204
		6. Logical Energies	- - -	213
		7. Logical Operations	- - -	218
iii.	sect. 1.	Dialectics	- - -	220
		2. Propositions	- - -	225
iv.	Analogism.			
	sect. 1.	Introduction	- - -	229
		2. Analogical Process	- - -	254
		3. Categories	- - -	263
		4. Forms of Analogism	- - -	273
		5. Categorical Analogism	- - -	277
		6. Hypothetical Analogism	- - -	292
		7. Discursive Analogism	- - -	302

PART III.

MODERN AND SCHOLASTIC LOGIC.

Chap.	i.	sect. 1.	Introduction	- - -	-	315
			2. Syllogism logically analysed	-	-	319
			3. Philosophy of the Syllogism	-	-	333
			4. Logical Organs compared	-	-	339

	Page
Chap. ii. Generalogism or Induction.	
<u>sect. 1. Introduction</u> - - -	343
2. Induction analysed - -	362
3. Modes of Generalogism - -	370
4. Physical Induction - -	372
5. Generalogism, Analogism, and Syllogism	
<u>compared</u> - - -	375

APPENDIX.

Chap. i. Method - - - -	381
ii. Sophistry or Fallacies - - -	392
Conclusion - - - -	408
Index - - - -	413

ERRATA.

- Page 14, line 29, *for anastamosis read anastomosis.*
 Page 119, lines 22, 27, 28, *for Enthymems read Enthymemes.*
 Page 120, line 1, *for Enalogy read Analogy.*
 Page 145, line 16, *for effecting read affecting.*
 Page 236, line 24, *after affirmed insert a comma.*

GENERAL INTRODUCTION.

1. To protect and cherish learning has been the gracious office of the Ministers of Religion from the earliest times,—and happily so ;—for the progeny of mind, like the offspring of the body, require fostering in infancy and decline. There is, nevertheless, a period of adolescence for both, in which the free exercise of the faculties becomes requisite to their growth and maturity.

2. Cloistered by the Hierophants and forbidden all freedom, the Arts of Egypt were torpid, cumbrous, and distorted ; but transported by Orpheus, Danaus, Cecrops,* and Cadmus into the free atmosphere of Greece, and animated by emulation and affection, they acquired grace and beauty ; whence it was elegantly said, that “in Athens the Graces rocked the cradle of Art,”—that “Love taught it to speak,”—and Liberty led it onward to perfection. Such also was the rise and career of infant Science, which from being mystic and mon-

* B. C. 1556.

strous in Egyptian bondage, became in Greece, rational, philosophic, and free.

3. That therefore the mature mind should first have established laws for its own government on the latter soil, and Logic have arisen as a science among a people who first asserted the freedom of intellect, is no more wonderful than that the science thus theoretically established should have made its next great advance* with philosophy practically, in a land of liberty, among a people equally renowned for arts and sterling intelligence; but it affords a remarkable coincidence, denoting that as Liberty has been the inseparable condition of excellence in art and science, so in the perfection of freedom we may look for the perfection of knowledge through Logic, which extirpates prejudice, gives laws to thought, and authority to law, with just regulation to the will and actions of mankind.

4. We may also deduce hence an important reciprocation between Liberty and Logic, which renders them expedient to each other; for as reason coerced becomes folly, so liberty without reason is mad;—nor is there a subject whereof a correct understanding and comprehension of its true relations is more incumbent, or in which illogical and absolute views have led to more deplorable consequences, than in this of liberty throughout the world of Ethics, moral, political, and religious.

* A. C. 1556.

5. *Personal liberty*, when politically uncontrolled, tends only to confusion and crime. *Intellectual liberty*, the natural right of every mind, tends also to moral, philosophical, and religious scepticism. *The liberty of Speech*, the *Pen*, and the *Press*, so essential to both the former, too often abuses freedom by libel and license, or degenerates, through mercenary advocacy, dishonest assumption, envious carping, party spirit, and contentious controversy, into literary anarchy or intellectual tyranny.

6. Necessary, therefore, as liberty of thought, speech, and actions are to the well-being of man, their due regulation is no less essential to their own interests and security; but the full attainment and permanent security of external and internal freedom—or the liberty of body and mind—can be no otherwise assured than by establishing correctly their coessential analogy logically.

7. Personal freedom may be governed by external, or political law, and intellectual freedom, or liberty of conscience, may be ruled by internal or moral law; but that by which they are coessentially connected,—the freedom of thought, expression, and the press,—without which neither of the others can long subsist, yields to neither of these laws, and can alone be adequately governed or controlled by Logical law—or the law and authority of reason and truth,—against which ignorance and selfishness are perpetually at war; and hence there is nothing more essential to the highest good and peace of

mankind than a correct Logic—the criterion of Truth and Right.

8. Should therefore a new and true æra of universal liberty dawn upon the world, a corresponding developement of logic must arise to save and sustain it from that *autonomy* at which republicanism aims; for in the authority of perfect logic, opinion and action will yield to reason, and demagogic and presumptuous authority sink alike to their proper levels, and names go for neither more nor less than they express: as in Logistics, or the science of Numbers; to the *ratios* of which all minds submit without appeal.

9. Milton, the glorious champion of virtuous freedom in all its forms, must have been prescient of this, and his treatise on Education, and his “*Artis Logicæ plenior Institutio*,” were probably the results of such conviction; but as he added nothing to the science, then in disfavour, having adopted the doctrine of Ramus—another champion of freedom, and victim to intellectual tyranny—he left Logic, the fundamental and sole just controlling power of the free mind, as he found it, and committed liberty to the coercion of policy.

10. Happily, the Great Predisposer has ordained universally that every power, whether physical, sensual* or moral, shall evolve its opposite; whence

* We do not hesitate to reclaim this term to its genuine signification from the gross and corrupt sense in which it is vulgarly used.

the negative arises with the positive, every love and inclination gives out its opposite aversion, every virtue points its vice, every position supposes its contrary, and the discovery of the one discloses the other: just as action and reaction are equal and opposed, harmony results from contrast, tyranny educes liberty, and liberty elicits law, while free intellection calls forth Logic for its control, as it did in Greece.

11. It is hence apparent that, conformably to nature and reason, Philosophy arising from the freedom and communication of thought is correlative with Logic, and that they can only succeed in concurrence, or err apart; for rational liberty is in every way coincident with intellect.

12. It is because liberty has not hitherto enacted a perfect logic, that logic has failed to license a refined and moral liberty,—for these are reciprocal. And if liberty has been better attained, longer preserved, and more widely extended by the British people than by others, it has been because they have excelled in logical intelligence, no less than in practical diligence; affording a ray of hope for degraded humanity, that in the full accomplishment of these faculties, liberty, virtue, and happiness will be established and perpetuated throughout the world. It is by the latent influence of reason that men submit to any other government than those of brute violence and force; and therefore it is incumbent on legislators to seek

perfect logic, and by reason to make absolute the authority of law.

13. As in morals and politics, so has God given reason to man in religion, as a light and guide throughout ethics—the sole ground of true conviction and pure faith in things intellectual and spiritual. The logician is therefore bound to regard the truths of correct reason as of greater certainty and authority than any human records, nor can he receive such in contradiction to reason on any authority;—nor can it be truly objected that this is opposed to any article of sacred Scripture or Christian faith as divinely revealed, both being necessarily consonant to *reason* as inspired by God—the Divine *Logos*.

14. Truth, whether of religion or of other things, must be brought to the test of the highest faculty—to that reason from which there is no appeal; or men will continue to fashion their faith to their inclinations, and act in subversion of moral, political, and religious good. But truth and reason, which are one, are the authority of God; nor does it impugn his ordinances to assert their agreement with the Logical faculty, which is of the spirit of the *Logos*, whence all truth and good.

15. Nor must the unqualified state of human reason be urged against these positions, but only to impress on Logicians, Legislators, and Divines, the expediency of perfecting Logic, and the propriety of preserving modesty and forbearance in our judg-

ments and condemnations of each other, ere we have extirpated prejudice and established through reason the authority of truth.

16. The infant and the ignorant believe or disbelieve anything, however absurd, upon confidence or authority, while the vicious shape their creeds to their selfishness. For any one to say he believes what he does not understand is as much only as to say he believes it *wilfully*, or does not *understand* it at all. To believe truly is to understand, and to understand is to have rational or sensible comprehension; and to disbelieve is the same. Any belief beyond or short of either is weak, vicious, idle, or insane; but as none are of the absolute extremes of infant weakness or of divine wisdom, so must men be relatively determined in the mean, according to reason, or continue to be the subjects of prejudice, ignorance, or indifference.

17. The popular argument against *Reason* in religious judgments is *its Fallacies*; but these, which have been made so much of by Logicians, contradict reason, and are dissipated by its lights. To argue against reason is of all logical fallacies the greatest, and urgently demands the reparation of reason, and the reformation of Logic.

18. Faith is the conviction of things thought but not seen; and as there can be no true conviction that is not logical, so neither can there be any faith for our reliance that is not rational, and such

as may banish hypocrisy from the ordinances of man, and establish the ordinances of the God of truth throughout ethics.

19. Logical instruction is therefore chiefly incumbent.—Education of the faculties, and above all of the highest faculty of mind and morals, is the first duty of man; for to reason belongs the control of reasonable beings, and any intolerance of reason, or harmless opinion by custom or authority, is incitement to deceit, sedition, or infidelity, and a debasement of humanity altogether: if, therefore, the word *liberal* mean *free*, without Logic, which teaches the use of the self-governing faculty of reason, the term *a liberal education* is a solecism.

20. Even more forcibly is this natural alliance of Liberty and Logic impressed upon the mind and confirmed by Christianity, the Divine vindication of moral and religious liberty,—the only logical religion—in its purity, binding man by no other laws than those of reason and truth, which are the laws of God:—a religion which precedes all human progress as a pillar of light, at once rational and free.

21. And on no subject has human reason been more eminently exerted than on Christianity, which has risen in purity with sound logic, and sunk with it in all the corruptions of learning and the schools,—happily emancipated from which, and from all irrational restraints, Logic and Liberty may proceed

hand in hand ; and in the perfection of logic, we repeat, we may confidently look for the accomplishment of religion, morality, and law.

22. Logically, *to follow Truth wherever it leads*, is the first principle of improvement in every science, and will without doubt, when freely pursued, conduct men to all *Truth*, and in the end to all *Good*, for the *identity* of their relations is admitted. And as *truth is for good, and not good for truth*, Truth precedes Good theoretically, but Good stands first practically ; and as there is nothing perfect but in degree, and all human doctrines and institutions are mixtures of truth and error—good and evil—it is highly reprehensible and irrational to pull down any fabric of good under pretence of truth, until we are prepared with certainty to set up a better in its place. And this applies to every doctrine and establishment, whether Religious, Political, Moral, or Material.

23. Since, therefore, Truth is the great instrument of improvement and reform, and Logic is the science of truth, let us inquire into the rise and progress of Logic, that, seeing what has been done, we may learn what is yet required for a Discipline so important to the good and advancement of man.

RISE AND PROGRESS OF LOGIC.

24. Dialectical Philosophy, or Logical argument, the subject of which is as old as the human mind, was first attributed as science to Parmenides, and Zeno the Eleatic, his disciple, who was of Eastern origin, and both of these philosophers were Pythagoreans; after whom Logic was improved by Euclid of Megara, a disciple of Socrates, and contemporary of Plato, who also employed the Socratic Induction. But these early Logicians seem to have accomplished little more for Logic than to have collected and handed down the philosophic Universals, which were afterwards arranged by Aristotle, the scholar of Plato, and by him established as the *Categories*, or Universal Predicaments and fundamentals of the Syllogistic Organ.

25. Plato, and his master Socrates, when combating the Sophists, or Scholastics of Greece, who first elicited Logic by their quibbles and subtleties, employed *Analogical Dialogy* and *Induction*; to which Aristotle added and carried out, if not invented, the *Syllogistic organ*, and systematised Philosophy in correspondence with Logic: thus completely displaying the forces of Logical Science, and marshalling them with a skill and acumen that defeated the reigning Sophism, and justly entitled him to be regarded as the parent and prince of

Logicians; although he thereby transferred Philosophy to intellectual ground, and rendered it universally subjective: from which time to that of Bacon the study of objective Nature languished in proportion as artificial Logic prevailed.

26. The testimony of history concerning these early circumstances of the science is extant in the writings of Plato and Aristotle, the latter of whom adverts to the rise of Logic at the end of his "*Organon*," and they are conveyed *traditionally* in various compilations since;* there is yet also a modern conjectural opinion of its origin from the East in countries to which the Greek Philosophers travelled, wherein have been discovered records of the Logical Disciplines coincident with those of the Greeks—but whether of Indian, Persian, Egyptian, or Chaldean origin, may still be questioned.

27. From the time of Aristotle, Logic ran the course of the Grecian schools without material change in its structure, subjecting every inquiry and science to its influence and perverting the anti-sophistical intention of its founders, till the time of Epicurus, who opposed the lofty Dialectic of the Stoics; with whom also the career of the Greek sects of Philosophy terminated, and who utterly corrupted and subverted their Logic by his *Κανὼν*—*Canon, or Critic of Judgment*—under which title he is said to have composed a book, wherein he consigned

* See Gale, ii. 365, 377.

all judgment of Reason to Sense, and held the senses to be the messengers and judges of truth*—a doctrine still rife among modern empiricists. And consistently with which, he held Rhetoric, and also the Mathematics, in contempt, it being quite natural that the Philosophy of Sense should depreciate the Logic of Reason, which our enlightened age has seen also exploded under no better pretence than that offences have been perpetrated in its name.

28. Subsequently to Epicurus, and among the Romans, nothing important appears to have been accomplished in Logic; except indeed that it is recorded by Quintilian and others, that C. Julius Cæsar composed a treatise on "The Logic of Analogy,"—and a manuscript bearing the same title has been disinterred at Herculaneum; but it has not, we believe, been unfolded, nor the name of its author ascertained. From the title of Cæsar's work, "*De Analogia*," the object of which being, it is said, "*to determine the use of words to congruity according to reason*," it was probably Philological rather than Logical, and Bacon calls it "a certain Grammatical Philosophy;" but the work being lost, conjecture is vain, and we notice it only from the importance of the subject, and its titular coincidence with the present Essay.

29. Nevertheless the ancient Logic revived under the latter Platonists, and that of Aristotle

* Diog. Laert. Cic. "De Nat. Deor." l. i.

established its dominion among the learned Arabs, and continued to reign despotically in the Christian and Mahometan schools during a period of learned darkness, from the closing of the Athenian schools to the reformation of Luther, about which time Ramus was born. He was the most eminent opponent and reformer of the Aristotelian Logic preceding the great Logical and Philosophical revolution of Bacon, which subverted the corrupted "Organon" of Aristotle, unchained the imagination of the poet, and established the "Novum Organum" throughout science.

30. Yet not suddenly—for some of the most eminent reasoners of the time, and Milton among them, followed the Logic of Ramus;* but the first fruits of freedom from Aristotle's authority, in Rhetoric and Poetic, which are parts of his Logic, were matured by the genius of Shakspeare.†

31. Notwithstanding Bacon's reform of Philosophy at length supplanted the Logic of his predecessors, he left his own in a very incomplete state; and although it has been widely extended in matter and practice, it has not undergone any remarkable improvement in form or theory.

32. Yet under every imperfection of the Baconian Induction—its few improvements, its various mis-

* See Milton's "Artis Logicæ plenior Institutio," 1672.

† Far be it from us, nevertheless, to impugn the mighty works of the Stagyrte while we condemn the misuses of his authority.

appliances and incapacities, it begins at the right practical extreme ; has done more for the advancement of physical Science than all other Disciplines together, as its author intended ; and has indeed been the mightiest advent hitherto for the amelioration, civilisation, and mental reformation of society—the Christian Dispensation only excepted.

33. A slight glance at the modern history of Science may satisfy us of these facts. One of the earliest and most illustrious disciples of the reformed school of Logic and Philosophy, if not also a principal therein, was the friend and physician of Bacon, the immortal Harvey, the first great supporter of Experimental Induction, the fruits of whose Exercitations were the doctrines of Circulation, Secretion, and Generation, whereby he threw a light into Animal and Vegetal Physiology that has disclosed New Systems, and discoveries that have given lustre to many great names in Medical and Botanical Science.

34. To the Harveian circulation and economy of the human *Microcosm* succeeded the Newtonian circulation and economy of the celestial *Macrocosm*, founded alike on the ground of Experimental Induction, and both established as general doctrines on true physical principles for ever.

[35. Since this was written, it has been announced at Oxford that the only difficulty in the doctrine of Harvey's discovery, that of the anastomosis or transfusion of the blood from the extremities of the

arteries to the commencement of the veins by inosculation or filtration, has been demonstrated ocularly by the vast power of the Improved Microscope : at the same time, also, that the Newtonian circulation of the Physical Universe has been coincidently illustrated by the astonishing powers of the Rossian Telescope.]

36. Were this the proper place, we might dilate on the extension of Harvey's doctrine by John Brown, Lincus, and other eminent followers and disciples of the Inductive school, who have filled with their lights and discoveries the wide range of Physics between the extreme systems of those two great men, Harvey and Newton, to the immense advancement of the knowledge, civilisation, and well-being of *mankind*.

37. More germane to our inquiry is the despicable Logic prevalent in Harvey's time, concerning which we have his own testimony. "The method of investigating truth commonly pursued at this time," said he, "is to be held as erroneous, and almost foolish, in which so many inquire what others have said, and omit to ask whether the things themselves be actually so or not ; and single universal conclusions being deduced from several premises, and analogies being thence shaped out, we have frequently mere verisimilitudes handed down to us instead of positive truths."* Whence we learn that

* See "Works of Harvey," by Dr. Willis, p. 162.

Logic had fallen under idle authorities, inconclusive syllogisms, and remote or fanciful analogies. Harvey adds, "whence it comes that pretenders to knowledge and sophists, trimming up the discoveries of others, changing the arrangement only, or the language, and adding a few things of no importance, audaciously send them forth as their own," &c. A sort of practice, we apprehend, still lingering among writers.

38. Harvey has also instructed us in the proper method of applying Logic by Experimental Induction in Physics: thus he remarks, "that by exhibiting the method of investigation which I have followed, I may propose to the studious a new, and unless I mistake, a safer way to the attainment of knowledge."* He subsequently traces the method of Experimental Induction to the Ancients, and especially to Aristotle, citing from the latter that "although that reasoning is naturally prior and more known which proceeds by Syllogism, still is that more perspicuous to us which is based on Induction;" and more to the same purpose.

39. He mentions in another work having employed his process—"at too great length, it may appear to those who do not see the end and object of such pains-taking, of such careful observation. Wherefore I think it advisable here to state what fruits may follow our industry, and in the words of

* Works, p. 152.

the learned Lord Verulam, 'to enter upon our second vintage.'"^{*} Thus carrying forward the Logic of Bacon. And of the works and discoveries in which Harvey employed the new method, it may truly be affirmed that they supplied the plan, laid the foundation, and stimulated the discoveries of succeeding physiologists, and in some cases even of his detractors.

40. Of Hippocrates it has been said that "he thought it not sufficient to know the nature of individuals, but the principles of the Universe. Indued with every species of knowledge he enlightened experience by reasoning, and rectified theory by practice. His rules for forming the Physician are worthy to be engraven in letters of gold; for they exhibit profound knowledge, consummate integrity, and an irreproachable life;—that his doctrine adopted among all nations would continue its beneficial effects for thousands of years; and that the greatest of Empires would be unable to dispute with the little Island of Cos the glory of having produced this man:"—an eulogium singularly applicable to Harvey.[†]

41. To Harvey succeeded Digby,[‡] Hobbes,[§] and other followers of the great Verulam, who, impugning the scholastic logic, advanced that of experience and sense; but chief among them was

^{*} On Generation, Ex. xxv. p. 270.

[†] See Urquart on Classical Learning, p. 12.

[‡] Treatise on the Soul. [§] Elements of Philosophy.

Locke, whose celebrated "Essay on the Human Understanding" maintained an influence, hardly inferior to that of Bacon, that has terminated the second *Æra* of Logic by appeal downward to *Common Sense*, not only in physics, but in every inquiry of the human mind.

42. Logic being thus referred and accommodated to popular understanding and sense, and Philosophy converted into practical Experience on the same ground, it may be expedient to take a wider survey of the influence of the Baconian revolution, and inquire into the means of restoring Logic as an entire and universal Discipline.

MODERN LOGIC.

43. When Bacon released Philosophy from the trammels of the Schools he assigned to it a new method, which established for the advancement of mankind a new and important æra in physics; but which while it checked the career of idle dispute, and the puerilities founded on the peripatetic discipline, nearly extinguished its Logic. And although Philosophy was thus placed on a new and physically reformed foundation, Logic, the criterion of all faith, truth, and knowledge, remained as a whole in the obsolescence to which Bacon and his successors consigned the Syllogism; and the at-

tempts made to restore the science to its integrity have failed to disengage it from the confused mass of scholastic trivialities and useless subtilties by which, from the time of the Sophists to the extinction of their emulators the Scholastics, it was distinguished.

44. Hence Induction, on which the new philosophy is founded, has ever since taken precedence of Syllogism, or supplied its place ; and late writers on logic have continued to aim at keeping down the syllogistic logic by the inductive, without purifying the science from scholasticism ; while they follow a fashion, and fly, according to the too frequent practice of reformers, from one vicious extreme to its opposite: whence it has happened that the organ subserving sense and experiment in philosophy has overpeered the organs of higher intellect, and that the physical sciences have risen above the moral: thus Logic, whose office it is to regulate inquiry, is itself in confusion, while the rapid increase of knowledge is every day rendering such regulation more and more necessary.

45. The failure of modern Logicians to restore the science seems in a great measure attributable to their having adopted one or other of the hypotheses which involved the disputes of the schools, and the having retained therewith the distinctions and divisions by which they perplexed the understanding, but from which it is the first duty of Logicians to clear the ground of the science.

46. Of these hypotheses which divided the schools, the most celebrated were *Nominalism*, *Conceptualism*, and *Realism*, — or Verbalism, Idealism, and Materialism, either as logically or philosophically regarded, which assumed Words, Thoughts, or Things as their respective objects, and have, one or other, infested logic and philosophy to this hour.

47. The first steps towards the entire re-establishment of Logic appears, therefore, to be to clear the ground from these hypotheses and all useless distinctions,—to reconstruct the science upon the full breadth of its foundation, avoiding the propensity of writers to circumscribe a subject to especial views, encumbered with endless details and illustrations, and to treat it as a whole with all expedient simplicity.

48. Yet is it not necessary in such an attempt to disembrace the disputes of past ages, which suffocate reason at its source, and which if, as is said, they sharpen the wits of men, it is only as these sharpen their weapons for disabling and destroying: but it is necessary to extirpate the taste for logical tournament which prevailed in the schools, to the obstruction of science; and that advocacy, debate, and party-spirit by which logicians and philosophers, like politicians and divines, are led into contentions; and that idolatry of names, opinions, and authorities, which obstruct truth; none of which can be maintained, but by the abandonment of reason, and re-

storing the logic of that chivalrous class "who always offered by single combat, and at point of the sword, to maintain whatever they asserted."

49. Man will, however, yet make good his title to rationality. And although no successful attempt has hitherto been made for the re-establishment of a universal logical system, yet many and celebrated are the names of those who have contributed to Logical literature since the time of Bacon and Locke, without eminently advancing the science, although various writers have produced works that may be studied with advantage.

50. Among them are especially Barrow, from whom, according to Wolfius, Tschirnhausen borrowed his "*Medicina Mentis*;" but their Logic is chiefly mathematical and syllogistic. Bishop Brown, Cheyne, Butler, Jones, and Tatham have treated of Analogy, and adapted it logically to Theology. Archbishop Whately has accomplished a valuable introduction to the Scholastic Logic, which has revived popular attention to the subject;—and the "*Artis Logicæ Rudimenta*," with illustrative observations printed at Oxford, has supplied an excellent work for the general student; while the late works of Dr. Todd and Mr. Mill are almost exclusively devoted to Induction, and others to especial sciences.

51. Yet has the new organ of Bacon, however much employed by modern philosophers, been little

improved by logicians, notwithstanding the attempts of De Jurain* and Dr. Shaw,† and the progress of Experimental Physics, in which the names of Harvey, Worcester, Boyle, Newton, Herschel, Priestly, Lavoisier, Davy, and many others of great eminence, may be adduced as practical promoters of Inductive Logic.

52. How little, nevertheless, has been hitherto achieved in this branch of the science, and also its present state, may be learnt from the following remark of a late author:—"At the risk of being charged with want of modesty, I cannot help expressing astonishment that a Philosopher of extraordinary attainments should have written an elaborate treatise on the Philosophy of Induction, in which he recognises no mode of induction except that of trying hypothesis after hypothesis until one is found which fits the phenomena; which one, when found, is to be assumed as true, with no other reservation than that if on examination it should appear to assume more than is needful for explaining the phenomena, the superfluous part of the assumption should be cut off. It is no exaggeration to say, that the process which we have described in these few words is the beginning, middle, and end of the Philosophy of Induction as this writer conceives it." And doubtlessly a cutting out, fitting, and trying

* *La Logique dégagé de la servitude de la Dialectique.*

† *Nov. Org.* by Dr. Shaw.

process like this, says little for the state and progress of Induction.

53. But, in *Universal Logic*, Kant, who combated the philosophy and logic of common sense, is decidedly the greatest reformer since the time of Bacon, his whole philosophy being a new form of Logic, or Noology; of which his "Logic" is a counterpart, adapted to that of the Stagyrice, and is a posthumous production with which he appears never to have been quite satisfied. And by the analysis of his "Critick of Pure Reason," which seems to be chiefly based on the doctrine and Categories of Aristotle, we find it is distributed into 1. *Transcendental Elementary doctrine*, and 2. *Transcendental Methodology*. The first of these he again divides into 1. *Transcendental Æsthetic*, including *Space and Time*, and 2. *Transcendental Logic*, which he subdivides further into, 1. *Analytic*, including *Conception and Principles*, and 2. *Dialectic*, including *Conception and Conclusions*. Again, under *Transcendental Methodology* he includes 1. *The History*, 2. *the Architectonic*, 3. *the Canon*, and 4. *the Discipline of Pure Reason*. The whole of which is *Logical* in subject, method, and nomenclature; and in his "Logic," Kant has adapted the Logic of Aristotle to the plan of his own Philosophy without advancing the science.*

54. The Noological or mental Philosopher, like

* See the "Logic" of Kant, translated by Richardson.

the Physical inquirer, has two logical modes, of equal authority in the investigations of mind; the one by which he *analyses* its faculties and functions, the other by which he *synthesises* or builds them up.

55. Kant adopted principally the synthetic mode, and built up the mind from experience, establishing at every station he attained certain *absolute* Forms, till in the end he attained to the *Absolute* itself; whence his *Forms of Sense, or Schematism*, synthesising Time and Space, as conceived by Berkeley;—*Forms of Understanding, or Categorism*, synthesising the Schemata,—and *Forms of Reason, or Idealism of the Absolute*, synthesising the Categories; thus carrying out universally the *Forms-seeking* process of the great Verulam in conjunction with the synthetical method of the Stagyrite.

56. But had this Great Metaphysician appealed to nature, and truly analysed the Noological system, he would have found that what he deduced from thought as *Absolute Ideas* are no other than the divisions or distinctions of the first Unity or Relation of the Logical mind,—Mind being a unifying faculty, or principle of Unity; and he would have found, too, that his deductions and inductions of the Understanding and Sense, or his *Categories* and *Schemata*, are the Logical Genera and Species, or sub-distinctions of the first Universals and prime Unity or relations of mind,—whereby he might have escaped what appears to us to be the two great faults of his System, infecting those of his

successors, — 1. the *separation of Reason from Understanding*, and 2. the *assumption of Logical Categories into Sense*, to the embarrassment of both Physics and Metaphysics. Justly, nevertheless, has this learned and profound thinker declared that the necessary condition of a critically correct “Philosophy rests solely upon this, that in order to a complete system, it must contain a full analysis of the whole of human cognition *à priori*.”* But to this a complete Logic, wherein he failed, is pre-essential.

57. The failure of the transcendental logic is even more apparent in physics, wherein the experimental method of Induction is still the effective mode; and if the old English distinctions of truth into *subjective* and *objective* be well-founded in logic and philosophy, then is the subjective treatment of objective sciences as illegitimate, as it is illogical and fruitless in physics, — falsely assuming the position of Deity, and descending therefrom, it becomes obscure and mystic; while in the objective view, ascent from the world to Deity is suited to the human faculties, progressive and perspicuous.

58. Since, then, on the one hand, Logic and Philosophy have been subtilized into mere visions of intellect, and, on the other, sunk into the gross realities of sense, equally at variance with universal reason, a mode that reconciles these extremes to

* Critick of Pure Reason, p. 22.

reason is essential to the reformation of Logic, and correct science.

59. The time has, however, yet to arrive for the consummation of Logic as a whole. *Syllogism*, which sprung on mathematical ground and is a logic of mere ratios, has exercised its best powers on the Mathematical Disciplines, — *Induction or Generalogism*, which arose similarly on a physical foundation, is still realising its powers in the Physical Sciences and misapplying them in the Rational, — and to the *Analogism* there yet remains the Metaphysical ground whereon to exercise its universal powers logically, and in the demonstration of Moral Ends. We call on Logicians, therefore, to cultivate this neglected mode.

60. But here it is especially to be remarked that we do not employ the term *Analogism* in the rhetorical and popular signification of resemblance or similitude, but as strictly and abstractly denoting a real and reciprocal relation, which, being paradigmatical, pervades and connects the universe *Logically*, and is the foundation of all parity of reason, all proportionalities, resemblances, and similitudes. To determine its regulation and laws is therefore of the utmost importance to developement throughout Philosophy, and indispensable to correct understanding and Logic.

61. Thus to the three great branches of knowledge Universal Wisdom has adapted distinct Logical Organs, and when these shall have been fully

developed, as in the progress of knowledge they will be, Logic will become a consistent whole, applicable through analogous organs to every subject with the full force and perspicuity of reason, truth, and conviction.

62. The master Mechanician knows, that although one instrument may effect many purposes for which it was never intended, every work is best accomplished by its proper instrument, and that correct and finished Art can be no otherwise attained; Logic supplies the instruments with which reason works; the best works are produced in all cases by the best and simplest means, and Logic affords no exception to these rules: but the constant error of Logicians has been the multiplication, complication, and misappli-ance of defective tools. It is, nevertheless, in the simplicity, sufficiency, and skilful application, and not in the display of instruments, that true science and art are accomplished.

63. It is a natural delusion of the human mind to regard every material thing, all sensations, and even thoughts, as absolute existences or things, and not as relations or reasons, and to name them accordingly. Hence philosophers have in vain attempted to supply a *physiological universe* to the mind, in place of a *logical* one; in consequence of which they have utterly failed of establishing a truly Logical system of philosophy, and instead of elevating and refining *being* to *intellect*, have de-

graded it into the grossness of materiality, or framed unstable, imaginary systems.

64. But as all knowledge is *Logical*, every existing thing is a *reason* to the mind, — whatever man can perspect or know, or of which he can any how have consciousness or conceive truly, is a *relation*, individual, general, or universal. The right conception, or pereception of the order of these relations, is pure Logic, and thence the whole system of truth and man, external, medial, and internal, — material, sensible, and intellectual, is *Analogical*, wherein Logic and Philosophy agree; and whatever can be brought home to reason is logical.

65. We have seen then that Logic is universal, and requires a universal basis, which we have elsewhere attempted to supply, by a Synopsis of Universal Philosophy, wherein we have shown that science as a whole is distrihutable according to nature into three great correlative departments, distinguished as Physiological, or the science of *objective things*; Philological, or science of *sensible signs*, or words, &c.; and the Noological, or science of *subjective thoughts*; the two latter of which are intimately connected.

66. We have further shewn also that Philosophy has universally the triple relation of *Science, Art,*

and *Discipline* ; which distinctions have been confounded, with much disadvantage to the courses of knowledge, since some departments proceed better as Disciplines, some as Sciences, and others as Arts, according as they happen to be more or less appropriately either Instrumental, Theoretical, or Practical ; and the Logical, *i. e.* the Philological and Noological departments of knowledge, are properly to be regarded as connected Disciplines ; all of which distinctions reciprocate throughout Philosophy.

67. In representing Logic as a *Discipline* rather than as a *science*, or an *art*, it is apparent we do but follow the natural course and example of the chief master of logic among the antients, whose work, the greatest ever produced on the subject, bears the title of “Organon,” which was also adopted by the greatest of modern logicians for his “Novum Organum ;” and the very name of *organ*, signifying an *instrument*, denotes a *discipline*. We have not scrupled, therefore, to give this name also to the Analogism, the universal instrument of Logic as a Discipline.

68. Logicians have, notwithstanding, regarded Logic as a Science or an Art, and sometimes as both these, although it is not strictly either, but is (as Geometry, Arithmetic, &c. are) a Discipline and Instrument of Art and Science ; yet are they, as every branch of knowledge is, susceptible of treatment either as Science, Art, or Discipline, or as all of these together.

69. According to the foregoing views our purpose is to treat of *Logic* on a universal basis, extending to the entire signification of the term as derived from the Greek *Λογικη*,—from *Λογος*, *reason* and *speech*, and *Λεγειν*, *to say*, and therefore to signify. *Logic* may hence be defined, the Discipline and Art of argument and discourse ; or otherwise, the Science of thinking and conveying thought ; and thus it extends to all Literary art. We intend, accordingly, to treat thereof as *Philological* and *Logical*, whence our outline will involve both the principles of Words and of Reasoning, which are not only naturally but necessarily connected as Signification, and connect as logical what have usually been treated, for convenience, as distinct sciences ; namely *Grammar*, *Rhetoric*, and *Logic*, including therewith the whole of the Philological sciences, and Semiotics, or the science of signification.

70. It will be at once perceived that our plan is a “return to the *Trivium* of the Schools ; not, indeed, to treat the different branches after the manner of the Schools, but in such a manner as to ensure the attainment of ‘another sort of *Logic* and *Critic* than what we have been hitherto acquainted with :” * convinced that the study of *Grammar* or *Philology* is an indispensable preliminary to *Logic*. †

71. Coincident herewith Aristotle, in the *Logical*

* Locke on Understanding, b. iv. c. 21.

† Richardson's Dict. p. xix. pref.

treatises of his "*Organon*," comprises first *Universal Terms*, secondly, the construction of *Sentences*, and thirdly, *Syllogisms*;—the first in his treatise "*On the Categories*," the second in that "*On Interpretations*," and the last in his "*Analytics*." Of the latter, the "*Prior Analytics*" treat of Demonstration of Terms, Propositions, and Syllogisms. The "*Posterior Analytics*" treat of Argument through Syllogism, Analogy or Comparison, Induction and Abduction. In the "*Topics*" he treats of probable Arguments; and, finally, of Sophism or Fallacies in his "*Sophistical Elenchi*;"—first as *Grammatical*, secondly as *Logical*, and thirdly as *Rhetorical*.

Such was the undoubted source of the *Trivium*, the departure from which may be regarded as an error in discipline.

Logic, then, in its full extent, involves *Letters*, *Words*, *Propositions*, *Organs*, and *Discourse*.

72. The Aristotelian Logic is essentially that of the Mathematician—they proceed alike; the simplest elements of Letters are the simplest forms of Geometry, and the simplest sounds of Harmonics, both of which as mathematical terminate only in the infinite *ratios* of Logical *reason*, proceeding from the simplest sign to the highest point or extreme of signification, through which Literature represents the Philosophic Universe and Logic in a corresponding whole.

73. Thus all discursive science and discourse

are composed of *propositions* connected, as all propositions consist of *words* connected; and as words consist of *literal* signs, sonorous, connected, so are propositions compound signs, and perfect discourse consists of complex signification connected in *Logical Unity*. It follows that Logic is grammatical, and Grammar logical inseparably; whence the Logical and Philological Sciences constitute a co-essential whole, and as such should be treated of in connexion, and the latter in subordination to the former as the instrument of thought, which is the counterpart of things.

74. Hence, again, Logic is the correlative of Philosophy; the first comprehending the Universe subjectively, the latter objectively, in reference to the Matter of which the former supplies the Forms, connecting them according to immutable Relations in one identical System.

75. Such are the general views under which we proceed first to lay down our plan of Philological Science as a whole; in the execution of which we shall restrain inquiry, throwing aside whatever may embarrass more than illustrate the ground-work, and releasing the whole from the inexpedient technicalities with which the Logical Disciplines have been obstructed, while we innovate as little as possible. We do not pretend, however, to render abstruse subjects popular, any more than to produce a Logic coincident with perfect liberty throughout Ethics. Perfection is beyond the human system, and to aid

or advance any subject relatively is the utmost an individual can hope, but to attempt it is a duty; all we propose is to survey the ground and trace the Outline of the Logical Sciences in general, and briefly to developpe that of the Analogism in particular.

76. Yet we cannot close this introduction without an apology for the inadequateness of our attempt; but if the difficulties of the task be considered, together with the slow progress of the science, and that Bacon, with all his powers and advantages, published his "*Cogitata et Visa*" after years of cogitation and revision, long before his "*Novum Organum*," which, following the precept of Horace and the example of Plato, he copied twelve times with his own hand, and revised annually during as many years, and still left it unfinished, the liberal reader will not be backward to excuse the imperfections of an attempt, made under much greater impediments, but which may serve to incite some mind qualified to accomplish an entire and complete System of Logic, now become the most important desideratum in literature.

May 3, 1849.


~~~~~  
**PART I.**  
~~~~~

PHILOLOGY:

OR,

THE ANALOGY OF LANGUAGE

INDICATED.

PHILOLOGY:

OR,

THE ANALOGY OF LANGUAGE.

CHAPTER I.

INTRODUCTION.

77. HAVING shown that Logic and Philosophy are universal systems, differing only in view, as subjective and objective, and that Philology, which is the science of language, and perspective of both these systems, is essentially logical, and that the three comprehend in universal relation words, thoughts, and things analogically, we proceed to inquire into the Logical relations of language or Philology.*

78. In commencing such inquiry we embark on an ocean which inspheres the whole world,—not of nature alone, but of art, science, and discipline; nor is it confined to the system of reality and truth only, but extends to things the most

* See our "Outlines of Analog. Phil." vol. i. p. 143.

fictitious and arbitrary, and grasping time and space, connects the present with the future and the past, while it is the medium of commerce and communication between men and nations, not only

"Speeding soft intercourse from soul to soul,
And wafting sighs from Indus to the Pole,"

but conveying precepts to the unborn, and bearing immortal instructions from the dead.

79. It is by thus uniting men and ages, that language has given to man the highest station among created beings; but for which he had remained, to the end of time, one only among the beasts of the earth: through the instrumentality of language, however, all the faculties of the individual are extended, the species becomes a great individual, and man a communicant with God.

80. Such are the powers and capacity of language, which is, at the same time, that department of the system of man wherein he exercises his faculties most diversely with least of the aid of nature and science, which are the same for all men; while language varies not only with nations and communities, but with parties, with individuals, and even with times, occasions, and modes of expressions.

81. It is hence that language has the earliest claim upon the attention of mankind, and that whatever, in the progress of philology, brings language nearer to universality, brings it nearer

to science and truth, which are its objects: nor is this unimportant to the happiness of mankind, since nations will think more alike when they think in similar language, and will better understand each other, and more readily communicate every good, as members of one family, under the same father, and not regard each other as alien, foreign, helot, or barbarian: an amelioration of the species now evidently in progress.

82. If these remarks appear exuberant, they are meant to shew the magnitude and perplexity of our subject, and how difficult it must be to attain satisfactorily the true natural principles, relations, and references of a topic so wonderfully comprehensive, fluctuating, and diversified; for which, also, the superabundance of literary matter is rather a hinderance than a help.

83. It is true, nevertheless, that the genius of many eminent grammarians has tended, with a philosophic spirit, toward the universal principles of language, so far as regards the grammar of written speech, and therein they afford us some aid; but this extends to a small portion only of the entire system of representation, which goes to every possible mode and manner of communicating knowledge, and embraces the system of philosophy and science universally, which, in its turn, can alone conduct us to the true relations and outline of philology, or the genuine ground and elements of signification, and the true analogy of language.

84. As so wide an investigation lies, however, beyond the commonly acknowledged bounds of this subject, and far exceeds the line of mere utility, a very brief outline may here suffice for evincing this universal philosophic connexion, and for bringing our subject into bearing with the general analogy of language upon the foundation of nature, so as to afford, at the same time, the widest possible basis of utility.

85. We shall not need, therefore, to enter into the voluminous particulars and endless discussions of the learned in languages, nor very widely into the inductions of the universal grammarians, philologists, ethnologists, and etymologists; for these are but branches and foliage to the tree of which we seek the root. The comparative ease, however, of tracing these ramifications, their luxuriance, and the facility with which they have conducted to literary reputation and academic honours, although achievements more of labour than of skill or intellect, may have been the temptations to which we owe the bulk of philology, and the preference the learned have shewn for this study to the neglect of logic and philosophy; although with little effect, so far, at least, as regards its foundation as a science: while it is to be regretted that *learning*, in particular, has been reduced to mere *lingual*, symbolical, and philological attainment in the study of the least instructive portion of the Greek and Roman classics; thus preferring, as

it were, a dwelling in ancient ruins, to the laying of solid foundations, and building of noble structures, for her own abode.

86. It adds to these temptations which learning has to found philology upon *words* alone, independently of *thoughts* and *things*—upon sense rather than upon reason, on the one hand, or nature on the other; or, in other words, to trace *signification*, not logically and analogically through identity of relation, or philosophically through understanding, but rather through sense, by the very uncertain and opposite process of etymologies and traditions—that it admits a flattering and ostentatious display of erudition which astounds, more than it instructs; while the rational process terminates in naked simplicity, and demands a degree and kind of intellectual exertion and attention both in the conception and reception, to which minds are but too commonly repugnant.

87. We dispute not, however, the benefits which arise from the labours of the etymologists and grammarians, so far as they may coincide with, elucidate, and confirm, the aim of philosophy. Etymology gives stability to language by disclosing the sources of words, and it does more so when it points out their relations; but, in seeking their originals, pedantry has often employed false and too remote derivations, and substituted similitudes of sound for analogies of reason. The source of a word is of much less importance than its relations

and signification, and is of secondary concern, therefore, even with the etymologist, with whom that which illustrates the latter is to be preferred to that which explicates the former, and that which is nearer is preferable to that which is remote, or beyond the compass or usage of the language itself.

88. Yet little has been done systematically by the learned to afford a truly philosophic form of philology, to which our outline may, nevertheless, contribute somewhat, and serve as an introduction to our logic in accordance with the ancient synthetic method, which founds syllogisms upon words and sentences, and philosophy upon logic in the order of words, thoughts, and things; a method probably resorted to upon the consideration that words which are last in philosophical analysis are first in the communication of thought or knowledge,—it is, accordingly, the method of *Discipline*, and therefore we have adopted it in this place.

89. But we regard the analytical method as most truly scientific, doctrinal, and perspicuous, while the method of synthesis belongs to art and practical discipline, and is necessarily laborious and obscure. Well, therefore, might Aristotle, who followed this method, assure his pupil, Alexander, that he had published and not published his doctrines, veiled, as they were, by synthesis; from which the scholastics of after times never emerged, although there arose among them, like sparks

amid smoke, disciples of extraordinary brightness, who kept alive the smothered fire of philosophy.

90. By neither of these methods can we hope to clear comprehension from all obscurity in a thing of such utter confusion and diversity as language and literature, and may be well content if we can open a way, or throw a new light thereon, which may assist us in conducting the inquiries of philosophy, and laying a foundation for logic.

91. In the communication of knowledge, words precede ; and hence it is that, in logical and mathematical disciplines, definition precedes argument, and argument precedes demonstration ; while logic is inseparable from philology, as thoughts are from words : accordingly, the Greek term *logos* (λογός), before remarked on, from which they are derived, justly and philosophically signifies both word and thought ; as, in like manner, *discourse* and *discursive* denote reasoning, speech, and communication, and have both a logical and philological import.

92. *Philology*, therefore, presents itself as the first Discipline, and is the instrument of *Logic*, as logic is of the *Mathematics*, and as the three together are of all knowledge, whether it be of science or of art.

93. This is also the order of nature and of education, memory being the faculty of the mind

which is first disclosed, and that upon which depends the acquisition of language ; which, again, is the first subject of education, and that upon which all knowledge is dependent. Not, however, to be cultivated at the expense of the higher functions of the mind, as Languages are in ordinary education, since the understanding is strictly a *capacity*, which, being surcharged with these stores of memory, becomes incapacitated for other and more important acquisitions ; nor is ever any human faculty unduly cultivated, but with a proportionate sacrifice of the rest.

94. It appears to us that an erroneous opinion on the reform of learning is now prevalent with regard to education, and the Colleges, which are not properly places for teaching Arts and Sciences, but for *Disciplines*. There was, therefore, sound judgment in the scholastics who adopted the *Trivium* of Grammar, Rhetoric, and Logic, with the Mathematical *Quadrivium* of Arithmetic, Music, Geometry, and Mechanics, or Pythagorean Disciplines, as the solid foundation of education, and as instruments of economical and social use for application in the Sciences and Arts.

95. The superficial teaching of the latter by Lectures may serve for illustration and recreations to the studious, or as refined amusements to those who have leisure, but are not the proper groundwork of teaching, and the analogical distinctions of

knowledges into Disciplines, Sciences, and Arts, are important to the due propagation and progress of intelligence and learning.

96. As the purpose of the ensuing sketch is chiefly concerned with the form of philology in relation to logical science, we need not enter deeply into the history and ethnography of language and the various stages of literary progress and invention. That the first characters employed in written language were *hieroglyphics*, or picture language, which represent objects by their figures and colours, there can be little doubt, and it is confirmed by historical testimony; and that *letters*, which characterize sounds, and are of general signification by compact, were of later invention, and gave the first scientific form to language and literature, is of as little doubt.

97. These are the figurate extremes of written characters, between which are *symbolic characters*, or signs of words, which are intermediate to alphabetical characters and pictures of things; and such are the Chinese literary characters.

98. It is evident also that other intermediate characters have been employed, and that *Literation* has been wholly progressive. Of this we have examples preserved in the Bodleian Library, and others recently copied by Mr. Catherwood's faithful pencil from the table of a stone altar of an extinct nation, among the ruins of Copan and Palenque, in Central America, lately visited by Mr. Stephens

and himself. This table is inscribed with characters tessellated, half picture and half symbol, between, and resembling both the hieroglyphs of Egypt and the Chinese characters; and the sides of the altar are surrounded with well-executed sculptures in high relief of cross-legged figures, resembling the Deities of the Hindoo Mythology,* and indicating an early period and Eastern origin, China and Mexico being opposite coasts of the Pacific, linked together by a chain of islands.

99. During the periods of Written Characters prior to the invention of Alphabetical Signs, when pictures and symbols of words were employed for correspondence and communication of knowledge, Language was in a state analogous to that of Commerce previously to the invention of Coin and Credit as *general signs* of value, and *things* were bartered in kind;—states in which neither the riches of mind nor body could abound, nor correspondents in either possess Capital for Exchange or Speculation.

100. Contrary to all reason and authority, some learned men would regard the Hieroglyph as an ultimate refinement. Thus Vossius asserts, “that the first discipline of the Egyptians is threefold,—1. the vulgar or *Epistolographic* used in corresponding, 2. the *Hieratic* used in civic records, and 3. the *Hieroglyphic* or sacred symbols.”†

* See Stephens' "Central America," vol. i. p. 141.

† De Philos. Sec. 6. 2; e, 2. 85.

Whence it is conjectured that the hieroglyph represents neither *words* nor *letters*, but entire *discourse* or *sentences*.^{*} Should they, however, represent variously *all of these*, it may account for the little progress hitherto made in deciphering them.

101. In the construction and composition of language, as of letters, there can be but little doubt also that Poetry, which merely *figures* and *symbolizes* knowledge, is more ancient than Prose, which *literalizes* it; the first in each case aggregates, concretes, and particularizes; the latter distributes, abstracts, and generalizes: hence the former of each is more technical, the latter more scientific and philosophical, but the first are here only of incidental inquiry. Whether language was the result of a natural progress or an immediate divine communication, are questions we leave, nevertheless, to the determination of ethnographers and divines; although we are assured by sacred writ that "whatsoever Adam called every *living creature*, that was the name thereof." We incline, however, to the opinion of the human origin of Language, because in all refinement of art there is an apparent tendency to elementary simplicity, and this especially in literary art, through which other arts are advanced and perfected in a similar manner.

102. Thus the first literary efforts of unad-

* Theop. Gale Co. of Gent. ii. 33.

vanced society are *Hieroglyphs*, the representations of things. From these men simplify to *Symbols* of words, and by an ultimate refinement they proceed to *Letters* or characters of sounds. These, by a like process of refinement, the Grammarians distinguish as *vocal* and *consonant*, simplifying the first into elementary tones and figures, at which simplicity and refinement cease, and nature and art terminate analytically.

103. Alphabetical Characters are, however, traced by others to Egyptian learning, many letters of the Hebrew being found among the Egyptian symbols or hieroglyphics, in which they had literal use and employment; and it is feasible that Moses obtained them thence,* and formed the first alphabet, or adopted the analogous Coptic, and rejected the hieroglyphics as of idolatrous character; thereby acting with superior wisdom, and advancing biblical learning, whereon the Alphabetical Literature is founded, and spread itself throughout the East. But if the hieroglyph were to be regarded as an ultimate refinement, and learning as revolving in a cycle, then might the present fashion arising in literature of pictural illustrations in place of text be absurdly regarded as the recommencement of a new cycle, in which a more perfect picture language, as destructive as the hieroglyphs were to fine art, is destined to supply the place of literation.

* Warburton's "Divine Legation of Moses," Book iv. sect. 4; and Schlegel's "Phil. of Hist." pp. 168, 169.

104. Refinement in Characters, as in literary composition, is, however, marked by simplicity of construction, and it is by analogy of languages that the general principles are disclosed through which Language itself may become universal, and individual dialects refined; and of living languages there is none better qualified for universality by elementary simplicity and convertibility than our own philosophic dialect.

105. The English is a language admirably adapted to precision and perspicuity—rich and copious above all in the abundance of words and variety of roots, while it is the most natural and simple in structure—widest in relation to other languages—widespread throughout the earth, and universal in application, partaking of the free spirit of its people. And although, like them, not free from errors and anomalies, it is self-correctible and flexible to all subjects, and to every variety of use, beauty, and purpose of language; through which it abounds with immortal works in every department of Literature, from the profoundest depths of philosophy and science to the most exalted sublimities and the most delicate and expressive beauties of poetry. Thus qualified by structure and habit, we may assume it to be better adapted than any other idiom to lay open the anatomy of language, and the philosophy, not only of speech, but of things; and although it be deficient of some peculiar excellencies of other lan-

guages, it is, on the whole, better suited than any other for coalescing and assimilating with them all.

But what shall we say to such logic as the following? "A language which is composed of several others possesses more copiousness than elegance; but such is the English language: the English language, therefore, possesses more copiousness than elegance." The sophistry of which syllogism lies in the false opposition assumed between elegance and copiousness; as if copiousness of materials were incompatible with elegance of construction.

CHAPTER II.

PHILOLOGY.

106. It has been shewn, in our Synopsis, that knowledge universal implies a universal mode of being, or *physiological science*—a universal mode of receiving, or *logical science*—and a universal mode of conveying, or *philological science*; the first referring to the matter and *object*—the second, to the form and *subject*—and the last, to the *representation*, sign, or interpretation of knowledge, or the medium by which the mind, or subject, receives and conveys knowledge or thought.

107. As the subject is of *internal*, or intrinsic reference, and the object is of *external*, or extrinsic reference, so is the representation of *medial*, or intermediate reference; and the latter is thence principally related to sense, as distinguished from matter and intelligence. Accordingly, sense supplies the representing medium and *signs* of all knowledge of *things* which are the objects of physiology, and of *thoughts* which belong to the logical subject; it has, therefore, a triple reference—subjective, objective, and representative, of which the

first or subjective reference of philology, being the logic of signs, is the principal in our present view.

108. As the elements of physiology and logic are powers and faculties, so are those of philology, and such are the senses, as limited with regard to knowledge; of which senses *feeling* is the genus, and *touch, sight, and sound* are the species: which, as respects philology, or the mode or means of conveying knowledge, are efficient of all language or philological operation.

109. Strictly speaking, therefore, every sensation is but the sign of the thing it represents; so that *sensation is the natural universal language of sensible beings, by which knowledge is received and communicated*; and, as knowledge is communicated artificially and conventionally only by *figures*, or characters, and *sounds*; and figure, though immediately belonging to touch, is mediately cognisable by the sense of sight; the language of art refers but to the two senses of sight and sound.

110. And since the arbitrary language of art is that of the first conveyance of philosophic knowledge, we may pass by the remainder of the infinite untrodden field of philological science, wherein every sense may be rendered significant of thoughts and things, as it is also capable of representing, interpreting, and conveying all knowledge.

111. Whence all language commences from signs of sensible objects and their relations, which are transferred by metaphor and figure to the being

and relations of moral and mental subjects, through a universal analogy, whereby physical and metaphysical relations are identified with various degrees of proximity or remoteness, by terms equally applicable to both; whence the general relations of number, time, space, motion, &c., have a double signification extending to the particular qualities of things, and throughout language, the source of figurative and poetical imagery, but which, when not distinguished in the use of words, renders them ambiguous, and gives rise to logical differences and dispute.

112. It is to the reciprocation and analogy of the parts of the universal system, remarkable throughout, that each sense owes its power of representing and conveying the entire system of knowledge: hence, we have entire languages of sound, or *articulate language*; and corresponding language of figures, or characters, or *written language*, which is silent; and we have these also united.

113. According to the same reciprocation, or analogy, the various powers of each distinct sense are also capable of constituting distinct languages: hence colour, which belongs to sight, forms no part of written language; and note, or music, which belongs to sound, has no necessary connexion with speech: yet languages might be constructed of note and colour, as they are constituted to the dumb, and in the mimes of the antients, and

modern pantomimes, by motion and gesture, which add, indeed, much signification to all speech ; nay, both reason and authority go to prove the possibility of tangible, and even gustatory and olfactory languages ; * to say nothing of the languages of signals and machines.

114. And since there is a natural constitution of figure and sound, which is of universal relation and analogy, and of unbounded scope, there is a perfect *natural constitution of figurate characters and articulate sounds*, and a capability or potentiality for a boundless variety of artificial characters and speech ; and from hence springs the variety of languages.

115. To this variability and fecundity of language may be attributed that chief cause of philosophic instability and controversy which lies in the fluctuation, confusion, and imperfections of artificial language, of which it is our present business to trace the natural and scientific relations, and to reconcile, in particular, with the system of logic.

116. Language, then, as *spoken* and *written*, refers to *sounds* and *characters*, as above limited, and also as coinciding with each other, or uniting in signification. Characters and sounds are, therefore, the elements of artificial languages ; and

* See Smith's "Optics," vol. ii. ; Remarks of Dr. Jurin, p. 29 ; Marquess of Worcester's "Century of Inventions ;" Bp. Berkeley ; Bp. Wilkins, &c.

to the last of these belongs the Orthoëpy of speech, and to the first the Orthography of written language.

117. The Egyptian hieroglyph, or symbol of speech or language, is said to have been a *tongue*, with an *eye* and a *hand* placed beneath it; and it has been variously interpreted:—"That the eye, as being most expressive, next to the tongue, was put beneath it, and the hand added, as executing its orders;"—"that the eye and hand were placed with the tongue in this symbol, on account of their powers in oratory," &c. Be these as they may, this hieroglyph of the Egyptians appears to be a most expressive symbol of language, as *spoken* by the tongue, *read* by the eye, and *written* by the hand, in the triple reference of *vision*, *sound*, and *gesture*.

118. In the simplest combination of characters with sounds, they constitute *Letters*, which are the elements of *Words*, or names of thoughts and things; of which *Sentences*, or propositions, and all language, are composed. And this agrees with and confirms the sub-genera or species of *Philology*, of which we have before indicated the position and universal relations, namely, *Semiotics*, which treat of literal signs, or letters; *Grammatics*, or inflection, which treat of names and words; and *Syntaxis*, or construction, which treats of enunciation and discourse: of which three, the first regard the elementary *principles* of speech,

letters or characters ; the second, the *relations* of words, or signs significant ; and the last regards the logical *purposes*, or chief objects of discourse, propositions and judgments ; and of these we proceed to treat in succession, in near agreement with Aristotle, who, in treating of diction, distributes this discipline into letters or signs, the syllable or words, and the conjunction, noun, verb, article, and case, or construction, and finally discourse or language.*

* " Poetics," Part ii. p. 24.

CHAPTER III.

SEMIOTICS.

SECTION I.

119. SIGNS, or characters, which are the subject of SEMIOTICS, are of three kinds: *vocal*, or letters; *mute*, rests or points, between which are *semi-vocal* emphatic signs or *accents*; and these divide Semiotics into *Literation*, *Punctuation*, and *Accentuation*, of which the first is principal, and the others subordinate. First, therefore, of letters, or alphabetical characters.

120. LETTERS are not only oral and visual, as distinguished by sounds, or figures and characters, or by both these united, according as they are spoken, written, or read; but they are also distinguished as *vowels*, *consonants*, and *diphthongs*, or polythongs; although all letters are, more or less, vocal or vowel sounds.

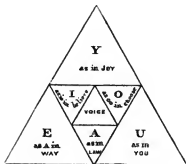
121. We will consider them, first, as vocal sounds, and afterwards as visual or figurate characters, in both of which there are still some rela-

tion and connexion discoverable between nature and art in the practice of language ; to trace and develope which become necessary, ere language can be established on logical analogy.

122. Of *literate sounds*, the vowels are most truly vocal, as their name expresses ; they are, therefore, the principal of alphabetical sounds, and are chiefly distinguishable as monothongs, diphthongs, and triphthongs. Imperfect and unsettled as the pronunciation of the vowels are, we may still trace a musical analogy among them ; thus, in pronouncing the vowels in the usual manner, and in the following order, E, I, U, O, A, we find the organs of articulation adapt themselves to a descending vocal scale, or musical series : perhaps, therefore, if nature had been strictly followed, the primary vowels, &c., would have taken relations similar to those of the common chord and consonances of the diatonic, or natural scale of music ; while the Consonants (which are aptly named), and Diphthongs and Triphthongs, or double and triple sounds, are but combinations, modifications, or intermediates of the vowels, in similar musical analogy, according to which the celebrated musician, Graun, employed the syllables *da, me, ni, po, tu, la, be*, instead of the Gammut of Guido.

123. The *Vowels* I, O, A, in their genuine original sounds, corresponding in relation, although not in interval, to the notes G, E, C, of the musical scale, would then be the primary alpha-

betical sounds; the relations of which to the secondary vowels E, Y, U, may be represented: first, among the vowels, as *primary*, in the central triangles, subtending alternately in pairs the *secondary*, they compose in the three extreme triangles, which enclose them in the following figure:



And it is worthy of remark respecting these elements of speech, that although the Greeks, who refined upon every thing, employed the secondary vowels, their African neighbours acknowledged only the three primary: namely, the *ye*, *elif*, and *waw* of the Arabic, corresponding with the א, י, ו which are properly the only three original vowels of the Hebrew alphabet; whence it has been inferred that the two alphabets were originally constructed on the same system.*

124. Steel, after Wallis, mentions this also,

* "Classical Journal," vol. ix. p. 541.

and attributes to each of the three vowels, as Guttural, Palatial, and Labial, three sounds greater, middle, and less ; of which making nine vowel-sounds, he gives an illustrative table.*

125. Aristotle distributed Letters into three kinds, 1. *Vowels*, which have sound without ejaculation, as A and O ; 2. *Semivowels*, having sound with ejaculation, as S and R ; and 3. *Mutes*, which have ejaculation but no sound of their own, as C and D. All of which differ, as aspirate or smooth, long or short, acute or grave ; and he refers the whole subject to metrical art.†

126. To this representation of the powers of the genuine vowel sounds as elements of language, which appear to have been much impaired in their modern pronunciation, some authorities may be necessary ; and although a great number might be cited, the two following will be deemed sufficient. Parsons, in his “Remains of Japhet,” p. 413, treating of the ancient Magogian and Gomerian alphabet, used by the ancient Britons and Irish, remarks, “The vowels are thus pronounced : *a* as *aw*, in *law* ; the *e* as *ay*, in *way* ; the *i* as *ee*,‡ in *weed* ; the *o* open, as in most languages ; the *u*

* “Grammar of y^e Eng. Tong.” 3d ed. 1714, p. 22.

† “Poetics,” Part ii. sect. 24. See Harris’s “Hermes,” iii. 2.

‡ This also it is still properly pronounced in many words ; as in *Indivisibility*, pronounced *In-dee-vee-see-bee-lee-tee*, according to the remark of Buchanan, “Brit. Gram.” p. 41.

as *oo*, in *wood*." "You know," says Socrates, in the "Cratylus" of Plato, "that our ancestors very frequently used the $\bar{i}$ (and $\bar{\delta}$); but now, instead of the $\bar{i}$, they perversely use either the $\hat{i}$ or $\tilde{i}$, (and $\tilde{\epsilon}$ instead of $\bar{\delta}$)." Socrates alludes here to the ancient Cadmean alphabet, in which the i answered to the Hebrew and Phœnician *jod*, and the E was sounded like the bleat of a sheep, as we now improperly pronounce the A in English. The O of the same alphabet, whether long or short, had but this one character, and corresponded to the Hebrew and Phœnician *oin*.

127. That the Greeks so sounded these vowels, we may gather also from the order in which they employed them in singing the $\tau\bar{a}$, $\tau\tilde{\eta}$, $\tau\bar{\omega}$, $\tau\hat{\epsilon}$, to the notes of their tetrachord, as the modern musicians less regularly employ them in the monosyllables *mī*, *fā*, *sōl*, *lā*, &c. in *sōlmisātion*.* And it is apparent that the general order of the alphabet partakes of this musical analogy of the vowels, as denoted in the table, [133].

128. The secondary vowels, E, Y, and U, are double vocal sounds, or *diphthongs*, when they assume not the simple power of the primary vowels. This is evinced with regard to U, when it is the initial of any word preceded by the indefinite article *a* (which, according to the rule, should

* See "Burney on Antient Music," p. 6, and Plutarch "De Musica."

become *an* before a vowel); thus: a united; a useful; a universal, &c.; before either of which, in spite of the rule, the ear can hardly endure the pedantic *an*, any more than it can the article *a* before either of the vowels *i*, *o*, or *a*, as any musical ear will allow, although, by custom and habit, the ear will tolerate any cacophony; as, Whoever saw *an* unicorn? And *Y* is allowed to be as frequently consonant as vocal; yet old writers used *an* before *y* as frequently as we now do before *u*: thus, "*An* year's banishment," &c.; but the usage in both will be dropt when we cease to affect *rule* against nature.

129. These remarks apply also, in some cases, to the primary vowels; thus, in the word *one* the *o* is a diphthong, or consonant, equivalent to *w*, and the ear can hardly tolerate the regular article preceding it; hence, to an unprejudiced ear, *such a one* is preferable to *such an one*, and before the two vowels or diphthong *Eu* we use the article *a*, and say, *a European*, &c.

130. Grammarians, by rendering their rules universal contrarily to natural usage, while they seem to refine a language, and render it more regular, learned, and scientific, destroy its melody; and it is to the exceptions, or temperament of rules, with a correct knowledge thereof, that many of the graces of a proficient practice in every art belong; and as we have no invariable vowels, so we cannot justly govern them by invariable rules.

131. Upon the same principle, the article *a* should become *an* before any word which begins with a silent consonant preceding a vowel; thus, before a silent *h*, as *an hour*, &c.; although the *an* is sometimes employed in robbing us of our aspirate. A correct ear will, however, guide us aright in all such cases of euphony; and our indefinite article, assisted by the ear, is an infallible test for determining whether any letter it precedes is sounded as a vowel or a consonant, except, indeed, such letter stand alone: for, in such case, every vocal consonant, including the liquids, will require *an* before it. For example, *an F*, *an H*, *L*, *M*, *N*, *R*, *S*, and *an X*; but all the mutes will, in the same case, require the *a* prefixed; thus: *a B*, *a C*, *D*, *G*, *K*, *P*, *Q*, *T*, *V*, *W*, *Y*, and *a Z*.

132. It appears, therefore, that there are letters which are *intermediates* of the *vowel* and *consonant*, although, in strictness, there are neither absolutely mute consonants nor perfectly vocal vowels; but every letter partakes of the vocal and the mute as musical sounds partake of sound and silence, acuteness and gravity, as their extreme principles, or light and shade.

133. Accordingly, the vocal relations of the consonants, &c., to the three primary vowels, may be traced throughout our alphabet, as in the following table:

ALPHABET.

		A — to — E — to — I — to — O — to — U — to — Y.																								
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	V	W	X	Y	Z			
Vowels.	I, <i>ie</i> , or <i>e</i>	be	ce	de	ea	ef	ge	.....	.....	.....	el	em	en	pe	.....	.....	es	te	ve	.....	ex	.....	zed	Labial,		
	O, <i>oo</i> , or <i>u</i>	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	kou	.....	.....	.....	.....	ou	.....	oul	.....	Palatal,		
	A	.....	.....	.....	.....	.....	.....	.....	ach	ja	ka	.....	.....	.....	.....	ar	.....	.....	.....	.....	.....	.....	.....	Guttural,		
																									Consonants.	

These, as sounded near the lips, within the mouth, or at the throat, are, according to the distinctions of Dr. Wallace, *labial*, *palatal*, or *guttural*, in the order of the vowels I, O, A; or, as intermediate to these, they are *dental* or *nasal* articulations.

134. When it happens that a consonant in any word is not sounded, the vowel to which it owes its sound may be put in its place; thus, the consonant G being silent in the words *feign*, *foreign*, *cognisant*, *paradigm*, &c., may be substituted by its vowel E; thus, *feien*, *foreien*, *coenisant*, *paradiem*, &c.; or they may be entirely omitted, without affecting the pronunciation of the words, although neither of these changes is admitted by custom, or recorded orthography.

135. As different nations, and even different provinces and individuals of the same nations, articulate and sound these elements of language variously, there can be no certainty, but only probability concerning things so variable and composite as articulate sounds.

136. After the sound of letters, as articulate or vocal, come for consideration their figurate cha-

racters, as graphic, or visual. Now, the earliest attempt at literary or epistolographic communication or writing, seems to have been by the figures of particular things, or *pictural representations*, as among the aboriginal Mexicans. The *hieroglyphs* of the antient Egyptians were intermediates of such representations, and the more general symbols of the Chinese; and the next step from these *symbols of words* being to universal signs, afforded letters, such as they appear in the Sanscrit characters, which bear a decided resemblance to the more complex characters of the Chinese, and are the farthest removed from the more simple characters of modern alphabets, which finally approach the pure elementary figures of geometry.

137. Thus, the natural progress of written language is a generalising logical process, from symbols of particular things to symbols of general signs, words, and thoughts; and thence to symbols of sounds, or universal alphabetical signs, of which we have attempted the analysis. Thus, the philological and the logical progress of man from particulars to universals, from the segregate to the abstract, are the same.

138. Regarding letters, then, as visual, namely, in their written or figurate characters, there should be in nature and science a foundation for them also, as systematic as for their vocal sounds, for they are geometrical forms or figures, which have

elements also in the same respects as sounds have ; and though there may seem less connexion between natural forms and the figures of letters than there is between natural and artificial sounds, yet it is a remarkable coincidence with our view that the three primary vowels in the Magogian, and other antient languages,* as well as in the Grecian and Roman characters, I, O, A, are of the three primary forms, the *line*, the *circle*, and the *angle* ; of which all other linear figures, geometrical and literal, are only variations or compounds.

139. So, again, the letter Y appears to be a compound, both in sound and figure, of the V and I. Again, by opening A to a right angle, and adding the letter $\neg$ to it at the bottom, E is in like manner composed ; and U is nearly a compound of O and I, or V and I ; whence the vowels, as secondary both in figure and sound, seem to be produced by compounding their primaries interchangeably.

140. A particular investigation of the characters of the various antient and modern alphabets might supply other similar coincidences ; not that either the figures or sounds of letters were really originated as above, notwithstanding the possibility thereof, but that they became such, in time, through a natural tendency, and the immutable relation and connexion between things natural

* “ Remains of Japhet,” pp. 330, 404.

and artificial, by which the most arbitrary acts and contrivances of man are biased; evincing that art in man is at its origin furthest removed from the practice and perfection of nature, to which the artist in the end attains, progressively refining and purifying practice to the simplicity of nature. Accordingly, the vowel sounds were not distinguished by the inventors of the alphabet, nor in the earliest languages; but this was principally reserved for the Greeks, who all but attained the simplicity and perfection of nature therein.

141. On the whole, the alphabet may be regarded as a short-hand, in which a few characters serve by combination to express an unlimited number of ideas and things, by an abridgement of figurate signs, and a classification of vocal sounds, coincident in their elements, whereby the $I \wedge O$ of geometry represent the I, A, O of the alphabet, according to the common chord or triad of harmonic sounds.

142. We have proffered these remarks to shew that there is a natural and real analogy between the figures and sounds of letters, no less than that which has arisen accidentally, or been assumed by grammarians; and the natural tendency of language, and its progress toward the simple vocal sounds of the harmonic chord and primary geometrical figures in the three vowels I, O, A, might be supported by many coincidences testifying the natural universality and analogy of things and thoughts

of which language supplies the signs; to the grammatical system of which no artificial method is competent, and perfection therein is attainable only through that of nature.

143. This tendency and analogy of nature promote also the gradual reduction of the various languages of the earth, not only to identity of grammatical figures and sounds, but also toward identity of signification of things, and easy communication of thoughts; followed also by logical agreement, the first principle of truth and ethical good: a process of language much better entitled to the terms philosophical and universal, than the most ingenious artificial schemes of Wilkins, Leibnitz, D'Algrano, or others, and clearly exhibiting to grammarians and logicians the expediency of adhering to natural principles if they would permanently improve language or advance science.

144. The first step toward the *universality of Language* (diversity in which is the chief cause of diversity in the family of man) is the *universality of Signs*, already in a high degree accomplished by an ALPHABET purified from picturesque forms and simplified to the elements of figure and sound. The written alphabet thus simple in principles is incomparably the greatest of human inventions—great in the simplicity of its principles—magnificent in the extent of its means—and stupendous in its ends and accomplishments—the source of all science, and instrument of every art

by which mankind is benefited, beautified, civilised, elevated, and dignified—compared in effect with which the Steam-engine and Printing-press are the toys of babyhood. Yet we are literalising, not writing an eulogy; and, alas for human reputation! Who was the author of the first *Alphabet*?

145. Although in the etymology of letters, as of words, there may be much plausible conjecture with little certainty, it is, nevertheless, truly remarkable, that the sacred name Jc-hO-vAh, one of the most antient of the appellations of God, the tri-literal* tetragrammaton of the Hebrews, which they held to be incommunicable, too sacred to be pronounced, and of which, it is said, the genuine sound is lost, comprehends, evidently, the three primary letters, or elements of all language, and three only in the original Hebrew, ייח; and is, therefore, a name and construction the most honourable and expressive of His universal essence.† It was hence, perhaps, that the Hebrews of old held this name mysterious in connexion with the primitive doctrine of triunity.

146. It is no less remarkable that in Greek ΔΙΟ, also one of the most antient names of God, the first and final cause, so called as the Being *δι' ο, on account of which* all things are,‡ is literally

* See More's "Conjectura Cabbalistica," 47.

† Exod. vi. 3.

‡ Briant's "Ant. Mythol." vol. i. 38; Holwell's "Mythol.

constituted of the three primary geometrical figures, the elements of all possible forms, which are also almost as distinctly marked by the Roman letters of the word JAO,* another antient name of God, from which, according to antient heathen writers, Moses received his laws; and which word is undoubtedly derived from the JAH of the Old Testament.† But this inquiry is endless.

147. It may not be impertinent here, nevertheless, to remark, that the vocal sounds I, O, A, being analogous to the common chord in music, and capable of the same inversions and variations, may give harmony to the name Jêhôvâh, which includes them descending, as the word Hârmônîe does ascending; and hence, also, the general euphony of tri-syllabic names, such as Mônâstic, Wâshingtôn, Vêrônâ, &c. in which the vowels assume the three positions of the harmonic chord.

148. We may ascribe also to a like musical and rhythmic principle the gratification which the ear receives from alliteration, and the general harmony of language so far as the ear is affected by literary composition, and in particular by poetry.

and Etymol. Dict." 154; Taylor's "Aristot." xxiv.; Proc. "Theol." i. 136; Plato, i. p. xxvii.

* H. More's "Phil. Works, Conject. Cabal." 47, 48. "Classical Jour." viii. 387, 388; xvii. 263; xxiii. 229.

† "Extol Him that rideth upon the heavens by His name JAH."—Ps. lxviii. 4.

149. So much with regard to vocal signs and characters, or *letters*; next to which are semi-vocal characters, or *accents*, which are signs related to the first composition of letters in syllables and words: after which follow mute characters, or *points*, which relate to the composition of words in sentences,—both of which are of logical and grammatical reference as modificative of signification. To the two latter orders of characters belong Accentuation and Punctuation, both of which are of Grecian origin and triple analogy, and of each a very brief analysis may here suffice.

SECTION II.

150. ACCENTUATION comprehends three distinct characters and their offices,—the *acute accent* ['], which marks elevation of voice; the *grave accent* [`], which marks depression; and the *circumflex accent* [^], in which the other two forms are conjoined, and denote continuity of voice, rise, and fall, or the double cadence of acute and grave of simple sounds, with respect to note or tone.

151. But *accent* belongs not only to letters and syllables, but also to words and sentences, and then it takes the name of *emphasis*: it belongs finally, also, to themes and *emphatic sentences*, which in printing are distinguished by italics, capitals, and

large capitals, as they are in manuscript by single, double, and triple underlines, by all of which the logical and grammatical value and significations of letters, words, and sentences are variously affected in signification.

152. There are also *accents of quantity* with regard to time, which are either *long*, *short*, or *mean* ; of which two only require marking, namely, the *long accent* [—], and the *short accent* [˘], and these relate to all the varieties of metre.

SECTION III.

153. Finally, PUNCTUATION, which belongs to the composition of words and sentences, has also three principal characters—*the period* [.], which marks and terminates an entire sentence, or period ; *the comma* [,], which denotes its simplest member, or division ; and *the semicolon* [;], in which the two preceding characters, or points, are combined, for dividing compound periods, denoting a half period, or member.

154. As to the colon, or double period [:], which denotes conjunction of illustrative matter to a period already complete, it is a *note of conjunction*, similar to the *note of interrogation* [?], which is formed of the initial [Q] of Query, placed over the period at the end of a question ;

and the *note of admiration* [!] is formed by accenting the period [.'], to mark an emphatic sentence or expression: all of which are sufficiently expressive signs. These points have often the powers of words, the comma being Conjunctive, the semicolon Prepositive, and the period Disjunctive: others are Interrogative and Interjective, and derive hence considerable grammatical, rhetorical, and logical signification.

155. Punctuation, which is analogous to the pauses or rests in music, and similarly regulated, has, however, in strictness, a wider reference, and may be sensibly denoted by spaces of different lengths, in the manner of those used in the separation of words, which were originally written continuously in lines, without separation of any kind. Or the common points may be substituted by various lengths of the line, or dash [—], as it sometimes is; or by the positions of a point, or period, at the top, bottom, or middle of the letter, as was once the practice.

156. The dash is also used to denote the omission of words, and then it is called an *ellipsis*; as it is also to bound a *parenthesis*—thus—for which purpose brackets and crotchets are commonly employed [thus] and (thus); as are also commas, thus, in which use commas would be better inserted as they are in marking quotations, by inverting the first comma thus ‘thus, — or inserting instead thereof the spiritus asper, thus,

157. Besides these there is, opposed to the parenthesis, the caret [$\wedge$], employed to mark the place of introduction of any words in manuscript; also the hyphen [-], for connecting of syllables and compounding of words, &c.; and the brace [$\sim$], variously employed for connecting the especially related members of discourse. Of these, as of all literary signs and characters, simplicity of form and natural indication is the perfection; such as is the hand [, for pointing out some matter for especial notice or attention.

158. Many other arbitrary signs and abbreviates are employed in literature, which, being of less general reference, are better suited to a universal and practical treatise on Semiotics;—a desideratum in literature pregnant with utility. To this subject belongs literary Notation, of which we have spoken elsewhere.

159. All literary punctuation is employed in aid of sense and expression; but, as these are literally illimitable, the points in use do little more than mark the chief divisions and termination of sentences to the eye, and leave the many shades of expression, through pauses, to the judgment, taste, and discretion of the reader; so that the times usually assigned to mark pauses—as one, two, and three, to the comma, semicolon, and colon—are by no means invariable, but are, or ought to be, entirely subject to emphasis, harmony of expression, and sense. In poetry, they also give

way to the rhythmus and measure ; and the reader who is inattentive to this converts poetry into prose.

160. So much for Semiotics as the science of simple signs, or points, accents, and *Letters*. But *Words*, which are the subject of Grammar, are compound signs also, and therefore are a part of Semiotics, as letters are a part of Grammar, as its name expresses. So also *Sentences* and propositions, which are the subject of Syntax, are complex signs, and belong also to Semiotics, and to Grammar ; and there can be no absolute separation of the three, for they are co-essential, and the whole of Philology is the science of *Signification*. Hence, also, the figures of Rhetoric and Prosody, which arise as subjects of syntax, are semiotic, and the metaphor and comparison are signs, and Poetry throughout is symbolical. Hence these divisions of Philology are employed, not as absolute, but for easier elucidation and analysis, as relative, regulative, and subordinate to Logic.

161. ORTHOGRAPHY, which antiently signified the Art of Writing, now means the art of forming Words, or spelling with letters, and is a conventional practice with us ; which requires the regulation of art, and is here the link of connexion between Semiotics and Grammar.

CHAPTER IV.

GRAMMAR.

162. THE second literary or philological science is GRAMMAR, which, in common acceptation, extends to the whole of Philology, but denotes here the science of the nature and relations of words or terms only, and has been, in a practical view, not ineptly defined "the art of expressing the relations of things by words." As distinguished from Syntax, it is called Inflexion.

163. Of simple articulate signs or letters are composed syllables, which are compound vocal sounds, each including one primary vowel, and no more, with its consonants, and also *words* or names, which are compound articulations, resolvable into as many syllables as they contain simple vocal articulations or vowels, and are significant of things, or of thoughts, or of the relations of thoughts and things : and upon these, therefore, depend the logical and reciprocal relations of terms.

164. But as thoughts and things when compounded are very different from the individual

thoughts or things of which they are composed, so are the significations of the words by which they are represented equally changed by composition from their individual significations, however they may participate and retain in some degree their original meanings. Hence the necessity, to a perfectly clear communication of knowledge, of a systematic analogy and correspondence between words and thoughts, as between thoughts and things, and of an entire and systematic agreement of the whole.

165. Words are simple or monosyllables, or they are compounds of two or more syllables; and as every syllable has a principal sound or vowel through which it is *articulated*, so every compound word has a principal vowel, and the syllable containing it is predominant and *accentuated* in such words, and is, or should be, that syllable to which a word owes its chief *signification*.

166. In like manner, every *sentence*, enunciation, or proposition, has its principal word, predominant or emphatic sound, determined by its chief signification: for the *emphasis* is determined by the sense of a sentence; and if the elements or members of a syllable, word, or sentence, are complex or numerous, they have not only the predominance of powers spoken of, but they have also a subordination of secondary powers in their articulation, accentuation, and emphasis: so analogous is nature and genuine art in constituting systematic

logical wholes of their minutest, as in their greater works.

167. Although *signification* properly determines both accent and emphasis, yet accent chiefly depends upon the ear, and emphasis upon the understanding; and, inasmuch as the signification of words is fixed, and that of sentences depends upon the speaker, accent and emphasis differ: the full force of expression, nevertheless, depends upon their union or coalescence.

168. So much for sound; and as to signification, which is principal in words, the logician knows that every perfect proposition consists of something asserted of something: it therefore simply discloses *a relation*, or connective of two things—the one, in a philological sense, being *a subject*, the other *an attribute*; and all that can be asserted may be delivered in, and resolved into, these simple propositions, consisting of three words or terms.

169. It is clear, therefore, that there can be no other relations of words, or simple parts of speech (however variously they may be distinguished by Grammarians), than *Subjectives*, or Nouns-substantive; *Attributives*, or Nouns-adjective, called of old Adnames or Adnouns; and *Relatives*, or Verbs. Particles, which include every denomination of speech that denotes conjunction or connexion, are relatives or verbs, or verb-substantives or attributives, abbreviated and com-

pounded; as Tooke has, in many instances, satisfactorily proved.*

170. So again, *Substance*, or *Essence*, and *Relation*, are philosophical universals and logical categories; and as they are thus objectively as well as subjectively universal, so also must they be representatively universal. Hence, the *Substantive* and *Relative* are the true universal generic distinctions of words or parts of speech, comprehending all others.

171. Accordingly, all words are either names of objective *beings or things*, or names of subjective *relations or thoughts*; or, finally, they are names of *representative signs* or words. The first are called *Nouns Substantive*; the second, *Nouns Adjective* or attributive; and the last, the Pronoun and Verb—that is, the *Noun Relative* or connective; and these correspond to the Subject, Predicate, and Copula of logic, and their common nature is expressed by the term Noun, or name, under which they are reciprocally convertible.

172. As both logically and philosophically we know nothing more of thoughts and things than their relations, all words are names expressive of *relations*, therefore there are no other words or parts of speech than nouns or *Nominatives* and

* According to the native divisions of Arabic Grammar, Words are Nouns, Verbs, and Particles. "Clas. Jour." vol. xxx. 353.

relations or *Relatives*, and the variety of the latter are significant of the various relations of the things designated. Thus, while the Noun or nominative is unchangeable, the relations expressed by it are denoted by inflexion or additions of predicates, and the richer a language is in auxiliaries and particles, denoting these, the more expressive it is; but a perfect language must obviously depend on a perfect knowledge of universal relations, and therefore Universal Philosophy, Logic and Language, are reciprocally co-essential and analogous.

173. It is apparent, then, that words are relatively convertible, whence Substantives by predication become Adjectives; thus, *gold* becomes *golden*; and *impiety*, *impious*, &c. So, Adjectives by subjection become Substantives; thus, *good* becomes *goodness*, &c. Some words are both substantives and adjectives; and others are at once all parts of speech, according as they may happen to be employed: thus we say, *white-lead*, or *lead white*; *white-chalk*, or *chalk white*; or these words become verbs, as, *to chalk*, *to white* or *whiten*, &c.

174. So, again, Verbs become Substantives or Adjectives; thus, *to hate*, becomes *hatred* and *hateful*, &c. And the verb-substantive and verb-adjective, called Participles, are verbs either subjected or predicated; thus, *to hate*, becomes *hating* and *hated*, &c. And so on, interchangeably of all

words ; which, like all thoughts and all things, are relatives, to distinguish or to connect, and not absolutes.

175. Further, PARTICIPLES are either *verb-substantives*, *verb-adjectives*, or *adverbs*, and become such by being verbs either *subjected*, *predicated*, or *compared* : as, to love becomes *loving* present, existing, or in act ;—*loved* past, and *lovely* at all times. And thus *Adverbs* are participles partaking of the noun and verb. Adverbs are also words adjoined or attributed, and when applied to verbs or adjectives are compound attributives, and are called by Harris attributives of attributives.

176. Hence the *Verb*, which has been dignified with pre-eminence among words, appears to involve or combine the logical powers of the subject and predicate with the grammatical powers of the substantive and adjective, and thereby to become a true medium or copula for uniting subjects and predicates in conjoint signification or discourse. Accordingly, the Verb is a Substantive or Subject, with the adjuncts or adjects of time or tense, number, case, gender, figure, &c. ;* which relations are denoted by certain abbreviate auxiliaries,

* In the language of the North American Indians, instead of the distinctions of *gender*, they use distinctions of *genera*—i. e. *Animate* and *Inanimate* ; with them every thing is *he*, or *it*, &c. Their Plural is triple ; namely, *Dual*, *Definite*, or general, and *Indefinite*, or universal.—See Buchanan “ on the North American Indians,” pp. 220, 289.

inflexions, or terminations, &c.; the employment of which, while it has contributed to the brevity, facility, and grace of language, has been the means of concealing the true nature and office of the verb.*

177. It is apparent, then, that the verb is the cement of language, and the principal of Connectives, among which it is included with the conjunction, adjective, adverb, preposition, &c.; all of which latter parts of speech the ancient Sanscrit grammarians justly considered as indeclinable nouns.† Thus, our distinctions of the first genera of words, analogically deduced, do not essentially differ from the most approved authorities, including primarily Aristotle's; who, in his treatise of Interpretation, begins by distinguishing language into Noun and Verb, and afterwards calls verbs nouns having the attributives of connexion, time, &c.

178. As the *Verb* is the principal connective, and cement of language, it is universal or categorical, and consequently it expresses both Existence and Relation; whence the power of the auxiliary verb *to be* belongs to every verb, and as existence implies *action*, of which *time* is the most general form, so time is also a universal attribute by which every verb is modified; and these interpret the entire office of the verb with respect to time and

* See "Class. Jour." vol. xl. p. 11, 12, 14.

† "Asiat. Researches," vol. vii. p. 215. Lond. ed. 8vo.

connexion, and explain why the expressing of relation is essential to the verb, and that of existence or time is an attribute only.

179. It may be worthy of remark here, that all the verbal attributes of time, number, case, gender, and person, have been triply distinguished: time, as past, present, and future; number, as singular, dual, and plural; case, as nominative, genitive, and objective; gender, as masculine, feminine, and neuter; and person, as first, second, and third; so prone are words to adapt themselves to the relations of thoughts and things, and the universal analogy of nature.

180. Moods of verbs are of logical importance, corresponding to the variety of Propositions, as *indicative*, *imperative*, and *interrogative* or optative: which again divide into others, the imperative affording the potential and subjunctive, as the indicative does the infinitive; but natural regulation requires only the three first distinctions, and strictly we have no others in English, though we can easily express them all.*

181. These attributes are traceable to universal predicaments, and the whole grammar of words is logical, and its true distribution also categorical. Thus words as to kind are either *Substantives* according to the category of Substance;—in respect to that of Quality they are *Adjectives*,—and accord-

* See "Class. Jour." vol. xix. p. 237.

ing to the category of Relation they are *Verbs* or affirmations; while *Particles* include the minor predicaments of Quantity, Number, Time, Place, Action, Passion, &c.; and Steele, one of our old Grammarians, distributes the parts of speech into Names, Qualities, Affirmations, and calls Particles modes or manner of words.*

182. Again:—as Nouns Substantive denote either Genus, Species, or Individuals, so Nouns Adjective may be called *Definitives*, their office being to attribute the Generic, Specific, and Individual differences of Nouns Substantive briefly, according to true *logical definition*. For like reason Harris has given the name Definitive to the Article, because it Individuates or determines the Substantive.

183. Pursuing still the logical and analogical distinctions of words as signs, they are either particular, general, or universal. If particular, they are *proper names* of individuals; if general, they are *common names*, or special terms; and if universal, they are *categorical terms*; and they are distinguished as *Universal*, *Equivocal*, and *Analogous* or reciprocal.

184. Names are not formed upon the most intimate and accurate, but upon the most evident and superficial qualities and properties of things; hence, the nomenclature of science requires change,

* "Gram." p. 102.

and cannot become fixed till knowledge has attained perfection. Early language is particular, sensible, long-worded, and diffuse ; but in its maturity language becomes brief, abstract, general, and intellectual. Hence, the words of permanent language are for the most part *general*, or *common terms* ; for *proper names*, belonging to particulars or individuals, might be infinite in endless succession, and are rather accidents of language than language itself. These are also usually adopted or derived from general terms ; while, of *universal terms*, language is so deficient, that they also are, with few exceptions, borrowed from general terms, every one of which is a compound sign of as many ideas as are expressed or understood by the words contained in its definition.

185. This power of general terms arises from their either possessing inherently the three Logical distinctions of *particular*, *general*, and *universal*, or their acquiring it by added signs, such as are the Articles *A*, *An*, *And*, *Add*, *As*, *Any*, *All*, and the other grammatical signs of number, as singular, dual, plural, total, &c. ; such as *One*, *Some*, *No*, *None*, &c., according as they may be used *distributively* or *universally*, *collectively* or *generally*, or *singularly* or *individually*.

186. Of the use of these added signs we need not examples ; and of the inherent significations of terms the following may suffice, in the ordinary usage of the word *Man*.

- As Particular — *A man* came here yesterday . Individual.
 „ General — *Man* is addicted to war . . Specific.
 „ Universal — God created *Man* Generic.

In these three propositions, the term *man* is equivalent to *A man, some men, all men*. And this Syncategorem *all*, is in like manner *singular* when applied individually, and *general* when applied collectively, or *universal* when logically distributed.*

187. All *relative terms* co-include in some respect with their correlates, whence there is *individuality* in *universality*, and *universality* in *individuality*, and both of these in *generality, speciality*, and *particularity*; all of which are participant correlatively or analogically: whence these terms are frequently employed ambiguously, and with consequent logical obscurity.

188. As all words, except proper names, are *general terms*, and as Generality is unity and relative to Universality, it is logically apparent that all *the original roots of language must be Categorical*; and as every Category or Universal term includes the General, and the general the Individual, so Categorical terms themselves may have been taken primarily from general names, and these from Individuals accordingly as the one may have been pre-eminently Universal or the other General; whence *proper names may have been the*

* See "Artis Logicæ Rudimenta," p. 78.

primitive source of the Universal metaphorically. Thus the name Jchovah may signify *Being*, or the name Adam become that of *Man*, and there is a reciprocation of the Universal and Individual in signs.

189. In the mutations of Language Abstract significations of words are first given as proper names to Individuals, by degrees they are extended to Families of things or Pluralities; then they become Species, Genera, or Universals. Thus are words rendered *Categorical* by abstraction from particular Signs, or by addition rendered General and Specific parts of speech from Universal signs. There are instances also of General words and terms gradually narrowing their significations to Particulars and Individuals, and of even changing their category, and of qualities and attributes becoming names of substantives and things,—so that signs and the whole of language or signification is in perpetual mutation, for want of regard to which men run innocently into ambiguities, equivocations, and misunderstandings,—and Logicians into errors in their demonstrations; and of this mutation every word is one way or another an instance. In infancy Pap-pap and Mam-mam first mean Milk—the Mammæ—Meat—Matter—Mater—Mother—Man; then Papa—Pater—Patria—Pope,—and spread universally, setting out from a particular, to trace and disclose which is the office of Etymology.

190. But for such mutations of words knowledge would stagnate for want of signs, or they would multiply beyond memory and management. As it is, the Logician must content himself to make sure the signification and ground of discourse, and guard against equivocation and sophistry.

191. Of Aristotle's Predicables the Universal comprehends Genus, Species, and Individual as mere relations of classes, variable according to reference, and attributable to all things. Thus Man is a universal or genus, of which Shakespere is a species or individual. Man is also an individual or species, of which Animal is the genus or universal. And so on to the first Category or universal Substance. It is the same with other terms according to their category, and these distinctions are mere attributes of number, as One, Many, or All—as Unity, Plurality, or Totality, *i. e.* as Individuality, Generality, or Universality, according to Category, Genus, or Species, equally belonging to Words, Propositions, and Arguments, and are universally Logical.

192. Inadvertence to these powers of words is a frequent occasion of ambiguity and false argument, since that may be true of the individual which is false of the many, or true of the many which is false of the whole; and *vice versâ*. It has also occasioned terms, significant or indicative of generality or universality, to be disregarded, as belonging to the class of *Articles* to which, in truth,

belong all terms and terminations expressing a unity, whether it be universal, general, or particular, or signify number, as dual, plural, &c.

193. The *Article*, then, is a categorical sign or word significant of a particularity, generality, or universality, as modes of Being; but, in some cases, also, it defines or identifies the particular, general, or universal, as in the *definite articles*, *The, This, These, Thee, Thou, They, That, Those, Them*, and other *pronominal articles*; for the *Pronoun* merely identifies or defines with the adjects of number, &c., as the *Article* does. *Which* and *What* are but interrogative, or sometimes assertive forms of *this* and *that*. Thus *The* and *Be* are of the same etymology.

194. What *Articles* are to nouns, *Auxiliaries* and terminations are to verbs; they are categorical expressions, or adverbial signs of being or relation, employed as significant adjuncts to the verb, to indicate its relations and accidents, and to abbreviate and generalize language, by freeing it from the necessity of a constant repetition of particulars and periphrases. Such are the auxiliaries, *Be, Have, Do, To, Shall, Will, If*, &c., which are traceable to universal logical predicaments or categories.

195. Of these *Auxiliaries*, *Be*, and its inflexions, denote the prime category, *Existence, subsistence, or substance*; *Have*, and its inflexions, denote *Possession and Habit*; and of this word the pre-

position *of* seem to be a corrupt, or original pronunciation ; and *av*, or *have* unaspirated, is still a common provincial pronunciation of *of*. *Do*, &c., denote command and *Action* ; *To* signifies *Place* indefinite, as *Shall* and *Will*, &c., do *Time*, and *May*, *Can*, &c., denote *Power* or *Potence*, and *If*, *conditionality*, &c. Whence the distinctions of the *moods* and *tenses* of verbs, of which they are the signs, as other signs are of the distinctions of *quantity*, or *number and person*, &c., in coincidence with the article.

196. This reference of the Auxiliaries is confirmed by etymological coincidence also ; thus, *Is* appears to belong to the regular form of the third person singular of the verb *to be*, declined thus : I *be*, thou *be-est*, he *b'-is*, or *is*, or *exists*. With the definitive article *the*, *Is* becomes *The is*, *Th'is*, or *This*, and also *Th'ese* and *Th'ose*, all expressing *be*, *being*, or *actual existence*. Again, *It* appears to be the irregular form of *is*, or *b'is*, namely, *b'it* ; and both *is* and *it* signify existence or being ;—from which, in like manner, come *The-it* or *Th'at*, *They* and *Them*. Thus do these pronominal articles belong to the same category as the article itself.

197. These words are full of signification, and afford the briefest identical propositions in our language, as *it is it*, or *th'it is th'it*, or *that is that* ; or, again, *th'is is th'is*, or *this is this*, or *this is that* ; which propositions say little to sense, but compre-

hend and import much, and are forms of universal application in the language and reasoning of mankind.

198. Thus there is a categorical unity pervading all language, which has escaped notice, although it is the basis of all signification in general terms, and affords an etymological unity in which every inquiry after roots will infallibly terminate if it be logically and philosophically conducted,—words, thoughts, and things being of one original, and the same analogy.

199. Accordingly it is logically and metaphysically evident that attribution and affirmation express only existence or modes of existence, and to do this being the office of the verb, verbs and their inflexions must be traceable to primary and secondary categories, or being and modes of being.

200. Philologists have confirmed this. Dr. Vincent, in his “Greek Verb Analysed, &c.” ingeniously conjectures that the various inflexions of verbs in the Greek and other languages were derived from some simple and very short original verb signifying *to do* or *to exist*, whence tense, modes, and other variations; a conjecture in which he was supported simultaneously without communication by a writer in the “Encyclopædia Britannica.”* These coincidences help to establish it as a logical and philological maxim that *the roots of general*

* See “Classical Journal,” vol. xiv, p. 194.

terms are categorical, serving at once as a guide to the Etymologist and an aid to the Logician.

201. Numberless illustrations of this maxim may be traced in our own language, the most difficult as well as most important of which are the prefixes and terminations by which words are inflected : thus the terminations *Ic, Ish, Ist, Ism, Ive, Ize, Ise, Est, Es*, &c. express Being from the same category as *Is*, from the verb to *be*. So again *En, Ent, In, Ing, Ion, On, Em, Im, An, Ance, Ain, Ness*, express *entity* or being ; as *brok-en* being broke, *wood-en* being wood, *good-ness* *good-en-is*, and others of like universal relation.

202. *To*, the prefix or sign of the infinitive of the English verb, by which nouns or mere names are converted into verbs, is also categorical, and denotes *being in action*, and is only a variation of the auxiliary verb *to do*, being itself also an auxiliary ; thus, *I love* or *do love* is only the pronoun added to the infinitive rendered declinable, as *thou lovest* or *dost love*, &c. Tooke has ascribed *To* and *Do* to the same etymon.

203. The universal substantive pronoun, *thing*, appears to originate, in like manner, from *th'ing*, *the-ing*, or *being* ; and the termination *ing*, which distinguishes *the active participle*, seems also to be an abbreviation of *th-ing*, expressing *being*, existence, or action : thus, *writing* is *write-thing*, or *to write, in being or act* ; and the like of other verb-substantives. Thus also *think* is allied to

thing, with the same identity that *being* has to *thought* or consciousness; for *to think* is to imagine, conceive, or form *things*: or, as might be said, *to thing*. So likewise the verb-adjective, or *passive participle*, terminating in *ed* and *en*, may be derived from *had*, *did*, or *en-ded*, the past tense of the verb *to have*: thus, *Printed* is *printhead*, or *printen* or *end*, &c.*

204. Barbarous and uncouth as such anomalous expressions, even as examples, may seem to the ear, still their signification is complete. Etymological discussions, however, any further than they may serve to establish the philosophical and logical principles of words, are out of place here, and of little other use any where; we might otherwise trace all the *Particles* to their like brief categorical relations with like plausibility.

205. We must not, however, omit the words or signs of affirmation and negation, which are universal representatives, or replicates which answer to sentences and interrogations without repeating them; thus, instead of replying "*We will, or will not, go to Richmond to-morrow,*" in answer to the question, "*Will you go to Richmond to-morrow?*" we reply, *Yes* or *No*, which may be etymologized from *A*, signifying existence or being,—

* Or, as Tooke would say, *print-did*, from *do*, signifying action and time.

(*Ay*,—*Yea*,—*Ayes*,—*A-is*,—*Yes* ; be it, or be it so.
 thus : A ; *Nay*,—*No-a*,—*No* ; whence, *No one*,—*None*,—*Un*,—
 In—*D's*, &c.

206. Thus *Affirmation*, which includes negation, belongs to the same category as the *Article*, and might be considered as a distinct part of speech ; if, indeed, it comprehend not the whole of speech, since it is a universal definitive, and the whole business of language is either to *affirm*, to *interrogate*, or to *command* : but this belongs to the composition of words, sentences, or *Syntax*.

207. So much for the genera of simple words as words, which may be, and have been, distributed into species arbitrarily, and very variously distinguished as parts of speech, according to the variety of the things they represent, or the peculiar views of grammarians ; but, though we ought not to lose sight of the philosophical and logical relations and distinctions of words, it does not follow but that the distinctions of the parts of speech by grammarians may and ought to vary with the particular structure of language, and that these distinctions may also be very advantageously employed in teaching of grammar as an art, or discipline ; but the categorical import of particles denotes their relations and importance in logic.

208. Individual words and terms are in general equivalent to as many words as they have signifi-

cations, of which most words have, or are susceptible of, a great variety, which are to be learned from their context in writing or discourse; which, again, is too various to be defined. Hence, their significations change with every new relation or association; even a motion or gesture to the eye accompanying a word, or a tone to the ear, effect this change, and there are no more *absolute* significations of words than there are of ideas; and words are subject to all the mutations and distinctions of thoughts and things, and endless variations of context. It is hence that grammarians are sometimes perplexed in deciding to which of their parts of speech a word belongs.

209. Words, too, like letters, are *sounds significant*, and have, therefore, a double appropriation, to the *ear* and to the *understanding*; and the most significant sounds afford the best or most expressive words. Further, as we speak to the ear, so we write to the eye; in which way *CAPITALS* and *Italics*, which should never be employed, either initially or in composition, otherwise than emphatically, add signification to words, as *accent* and *emphasis* do through sounds,—e. g., *Excuse*, *Excuse*,—*Attribute*, *Attribute*, &c.; and in the first case, words alike in sound, but different in signification and formation, or spelling, are the same to the ear, but differ to the eye and understanding; the first belonging to the Orthoëpy of words, the latter to their Orthography.

210. With regard to the ear, harmony of composition belongs as well to the euphony and accordance of words, as it does to elementary sounds, or letters in the first instance. But, with respect to words, the most important consideration of all is their relation to understanding, the chief end of language being the clear conveyance of thought; and in this respect the analogy of structure and orthography are of chief importance.

211. It may be held as a rule, therefore, in the employment of words, that nothing ought to be an offence against grammar which is not, at the same time, an offence against reason and just signification or good sense: nor can any practice in this respect be good, which, however tolerated by custom or idiom, violates this rule; and, as clear conceptions depend upon accurate relations, so perspicuous signification depends upon the like relations of signs.

212. The virtue of language, therefore, lies, above all things, in a correct analogy of its structure and members; and, accordingly, the most perfect and fertile languages are distinguished in this respect—such as is the Greek; and such also, so far, at least, as respects the structure, is our own vigorous and simple dialect, which, assimilating the *matter* of all languages, assumes the simplest *form* of nature as its own.

213. The Greeks, who produced the most perfect models in art and philosophy, did not fail to

do the same in language, making nature rightly understood the ground of improvement—accommodating everything through analogy to the genius of their own language, as originally constituted: and, by the same means, we may arrive at the same end in a language, the natural principles, and probable similarity of origin, of which so much resemble theirs, and which is fraught with the same free and philosophic spirit.

214. It is the plastic power of the Greek language derived from *analogy*, and the flexibility of its terms and significations, that render it capable of modulation to all relations, which is the property most essential to science, and that which qualifies a language for the nomenclature of science universally, and renders it independent of other Dialects.

215. "There are indeed very few words which are not *analogous*; probably none, except those few which have come into general use, but have been wholly confined to some philosophical or technical application. Our *notions* are indeed more numerous than our *words*; each of these must therefore represent many of the former. Hence we must use words approximating in signification to the new ideas which we desire to express. In judging of this approximation, not only the illiterate but philosophers have often erred. Yet the words which custom has established, though philosophically erroneous in the analogical application, must

be retained; while they render a particular effort of the mind necessary, to guard itself against adopting the false principles on which the use of them was originally founded. The metaphysical terms, *Perception*, *Form*, *Idea*, &c. afford instances of the error here pointed out.

“The same words are often both equivocal and analogous: for instance, *Foot*; the part on which we stand; that which supports anything; the lower part; a measure of length; a certain number of syllables in a verse.

“Probably all these significations of the word *foot* are derived from analogy. But when the analogy is not obvious, the several senses are often considered independent of each other, and the word is classed as equivocal. Thus it may be doubted whether the signification of *κόσμος* and *mundus*, [and *world*] were attached to those words by a merely accidental coincidence, or whether they originated in any supposed analogy.”*

216. Analogy merits, therefore, the first attention of the grammarian and improvers of language, both in respect to signs and signification, and is, in the employment of terms, of much greater import than either custom or etymology; which are, nevertheless, to be respected, excepting always in deference to understanding. Hence we have ventured to employ the term *vegetal* (as Shakspeare

* “*Artis Logicæ Rudimenta*,” p. 24.

did, and as our neighbours the French do) as a substitute for *vegetable*, in relation and connexion with *animal* and *mineral*, &c. ; for we cannot say *animable* and *minerable* in connexion with *vegetable*.

217. We would, according to the same analogy, reclaim the word *Sensual* for science from the gross vulgar acceptance, which disqualifies it for correct analogy with *intellectual* ; for the term *sensuous*, proposed by Coleridge, is deficient of this analogy. In like manner, the appellation of *Physician*, confined by vulgar usage to the prescribers of medicine, ought to be redeemed to *Physics*. We might claim excuse, on the same ground, for employing the term *generalogism*, as well for analogy as signification, in the place of *induction*, in accordance with *sylllogism* and *analogism* ; and also for a few others of obvious signification.

218. This is a point, however, upon which we can hardly hope to escape the censure of the verbal critic, who never overlooks, rarely pardons, and hardly ever applauds, a new term or a new signification ; without this kind of jealousy, indeed, nothing could remain with stability ; but, at the same time, without some relaxation of convention and institution, we could only have inert permanence, without progress or improvement of any kind. Still, we ourselves readily condemn all needless innovation in the established language, and more so in the NOMENCLATURE of philosophy,

till such a uniformity of relations throughout science shall have been confirmed as will naturally conduct to uniformity of structure, relations, and termination among words.

THE ANALOGY OF LANGUAGE.

219. As *words* and all *language* are significant of conceptions and knowledge, correct Ideas and logically perfect knowledge are essential to perfect Language, and Language to be intelligible must be adapted also to the imperfection of our knowledge; consequently, as knowledge is ever fluctuating, so must words and language be ever varying.

Language is therefore necessarily conformable to all the changes and improvements of knowledge. It is injurious, nevertheless, to the just progress of knowledge and science to change the names of things and conceptions ere knowledge itself becomes clearly established, since neology, complication, and confusion of names, confound both knowledge and language which simple accepted terms render clear.

220. This is illustrated and confirmed by the modern Nomenclatures of Chemistry which followed the extraordinary discoveries and improvements of the science to which it was so ingeniously and immediately adapted, although it has proved inadequate to the succeeding changes. The same spirit

is infusing itself into other physical sciences, each of which acquires a distinct nomenclature, into which every reformer imposes some new confusion, so that when *Physics*, as they may, become reduced to the unity of knowledge, it will be found that Physicians, both medical and natural, have built for themselves a Tower of Babel, frustrated by a confusion of tongues; meanwhile the unlearned will have been deinstructed, and what knowledge they possess converted into ignorance by new scientific names substituted for such as are vernacular and sufficient to simple knowledge. The attempts are therefore excessive and mostly abortive, that aim at delivering the improvements and discoveries of the sciences in new language beyond the necessity of giving to what is absolutely new distinct appellations and symbols. And for such we know no better rule adapted to our compound, all-absorbing, and universal language, than to adopt the name most expressive of the thing signified and of easy composition, inflection, and pronunciation according to any received analogy of the language, or the science in which it is employed, from whatever point of the compass it may have come, and as free as possible from needless pedantry.

221. As to ETYMOLOGY, it is philosophical in tracing signification to its roots, when by a generalising process and ultimate universalisation it terminates in some Category, in which respect it is of high logical importance; but in tracing the roots of

words as signs it is merely Philological and Critical, antiquarian and curious, and useful only when logically true; but anagrammatism and transposition, so commonly resorted to by philologists, both in words and sentences, are the bane of Etymology and Criticism, by licensing fanciful and false significations.

222. Thus there is a logical as well as a philological, and a philosophical as well as a critical Etymology connected with sound:—an etymology of signification as well as of sign, by which natural derivation and relation are shewn, that are of much more philosophical and logical importance than the etymology of words, although neglected and for the most part despised by philologers. The terms *space* and *passion*, for example, are of the same philosophical root, if not of the same vocal origin. Thus *passive* signifies *spacive* or receptive; and such analogies are to be preferred, when well founded, to the doubtful, however plausible, etymologies of language, which are valuable only when they assist understanding and advance knowledge.

223. SYNONYMS. The last thing with regard to words individually, and that which lies nearest to their composition, is the relation of sameness and of their repetition in composition, which writers avoid for the sake of variety; but as a particular colour in a picture, standing alone and unaccompanied by touches of the same hue, becomes a spot,

so it is with any leading or significant word, un-repeated in a composition : and this *antanaclasis* is important, not only with respect to the harmony and connexion of words, but also of thoughts, for the leading thought of any theme must be variously repeated to hold a discourse well together. Subordination to a unity is the great principle of construction of every kind ; and the maxim according to which writers too strictly avoid the repetition of a word, is, therefore, often at fault, and always so when it sacrifices unity of signification to variety of sound in the employment of synonyms : but this brings us to the composition of words or Syntax, which lays the foundation of the common *logic* as a distinct science, and involves all the *rhetorical* arts. Our object in this chapter has been to disclose the philosophy and analogy of words and logic, and not the teaching of Grammar as an art and discipline.

CHAPTER V.

SYNTAXIS.

SECTION I.

224. THE third and last division of Philology is SYNTAXIS, which is the science of systematising words, or of the construction of *sentences* or propositions, judgments, periods, and discourse, simple or compound; and it involves the art of verbal or *Literary Composition*. In a particular and accepted sense, syntax is the art of arranging words according to the established rules of a language.

225. The *sentence*, or proposition, is a compound sign, which implies or contains, essentially, at least, one of each of the three primary orders or genera of words: a *substantive*, or subjective; an *attributive*, or predicate; and a *relative*, or connective; and these must agree in number, person, &c. Logically every proposition is a judgment expressive of a relation.

226. But as some single or simple signs (whether letters or syllables), are *words*, so some words are *propositions*, and hold an intermediate station between simple terms, or signs, and perfect compound significations or sentences; and such are many of the inflections of verbs.

227. Propositions are regarded technically in logic as having only two terms or extremes, the *Subject* and the *Predicate*; but the *Copula*, or verb which connects or identifies them and makes of them a logical judgment, is a *middle term*, therefore every proposition has necessarily *three terms*.

228. Such is the simple logical and grammatical *Judgment, proposition or sentence*, and if a *second judgment* be added as a reason or confirmation to the first, the sentence becomes a compound judgment and logical argument or *Enthymeme*, requiring only a third connecting term to become a *Syllogism*. Such *reason* of a previous proposition we call its *cause* which we require by asking *why?* and connect them by the term *because*; and we have shewn *cause* to be *concurrence* of things necessarily related, or *analogously*.

229. The rules of construction for the simple proposition are those also of the *period*, or compound proposition, and of all discourse which consists of propositions connected in series.

230. Many attributes may be connected with a subject, or subjects, or many subjects may be connected with an attribute or attributes; and these

also afford *compound sentences*, or periods, and parenthetical propositions; and sentences may be attributed and connected parenthetically in the manner of words.

231. Rhetorically, the *Parenthesis* has been objected to; but every compound proposition is parenthetical, nor can any sufficient discourse be conducted without some *putting in*: and the periods which comprehend no parenthesis must necessarily be short and meagre enunciations, tiring to the eye and teasing to the mind, although admired by many for their terseness.

232. This fashion of modern composition is opposed to the excessive employment and involution of long parentheses by old writers, who often introduced several of them together, or, what is worse, one within another, embarrassing the sense, and sometimes springing from, and always producing, obscurity and confusion.

233. The *Ellipsis* is the opposite of the *parenthesis*, and there is a third form of construction of Periods in which the members are opposed or contrasted antagonistically in sense or sound, and this is the *Antithesis*, and they may each become either a grace or a deformity, a good or an evil in discourse: for it is upon the addition, substraction, and division of words, rightly calculated, or upon the proper *putting in* and *leaving out*, that the truth, beauty, and excellence of all composition, and the fulness or faintness of the sense, depend.

But we digress ; and the *Digression* and *Episode* are to a poem, or an entire discourse, what a parenthesis is to a period or compound sentence.

234. If therefore simple enunciations and elliptical sentences in a continued discourse are short-breathed and feeble, the too complex and parenthetical are laboured and long-winded, and both these and the Antithetical in their extreme use are unnatural and affected. There lies, however, between them a medial construction neither long nor short, of a healthy, manly breathing, at once easy, forcible, harmonious, duly opposed, and effective, and it is upon employment of such sentences and periods according to just signification and logical conjunction that propriety of construction, good taste in composition, and effective argument and discourse depend.

235. To return to our position. The logical relation before noticed, as belonging to words and simple signs, prevails also in sentences as judgments ; thus, they are particular, general, or universal. They are also, as before shown, *simple enunciations* ; as, for example, "the dog barks," "the bird sings," "the mathematician calculates," &c. Or, they are *compound propositions*, periods, or arguments ; or they are compound arguments, or *continued discourse*. But each of these the grammarian acknowledges by the name of *sentences*, as the enthymeme and sorites are acknowledged to be syllogisms by the logician.

236. As sentences and propositions can only assert something, or ask something, or command something, there can be no other propositions or sentences than such as are either *enunciative*, *interrogative*, or *imperative*. All these are, however, only logical, or relative to the understanding, and connect this branch of knowledge with the science of Logic; of which propositions and judgments constitute the matter, and of which their signification is commonly treated as a part by logicians.*

237. Logically, every Proposition is a *Synthesis* of a subject and predicate, or an *Antithesis* connected by a copula, and may by *Analysis* be resolved into an *Hypothesis* which expresses the condition of agreement or disagreement between the predicate and subject, and a *Thesis* or position which contains that which so agrees. Wherefore, when the condition of the subject is expressed, the proposition is *Hypothetical*, but when the predicate is given unconditionally, the proposition is *Categorical* or absolute. Therefore, by expressing or suppressing the condition, the Hypothetical and Categorical, Affirmative and Negative, propositions are convertible, and this because every conceivable proposition is a correlation, or *Analogous*.

238. By the above, grammatically expressed, every *Proposition* is a *Position* or Thesis, having its *Composition* or Synthesis, its *Opposition* or

* See Aristotle's "Treat. of Interp."

Antithesis, its *Decomposition* or Analysis, and its *Supposition*, subposition, or Hypothesis,—and hereon have been founded innumerable distinctions of propositions, more curious than useful to the Logician.

239. Of the three varieties of Propositions, the Enunciative asserts something, the Interrogative raises a question or inquires, and the Imperative demands or commands; and they are produced by the conversion of the terms of a proposition: thus we make the *Predicate* emphatical in an assertion,—in a question we make the *Copula* emphatical,—but in a command or demand we make the *Subject* emphatical. Thus: John is *good*, asserts; *Is* John good? interrogates; Be good, *John*, commands. The three terms admit only of three positions, but the signification of each may be varied by a like transposition of the emphasis in each. In the first position the verb is in the *Indicative* mood, in the second *Optative*, and in the last *Imperative*,—of which three all the other moods of grammarians are varieties.

240. Of Propositions the Indicative or Enunciative is principal in Logic, and its prime function is to define. *Definition* is, accordingly, the fundamental operation of Logic, and its office is to supply reason with correct premises for the compound operations of logical discourse, or, in other words, to supply argument with true and perspicuous terms and propositions as members thereof. To

Define is therefore to predicate or attribute of any subject, word, thought, or thing *individually, specially, or generically*; *i. e.* logically, and every enunciative proposition does so.

241. To detail the various distinctions of *Definition* to be found in logical writings would be to compile a treatise; we regard it as alone essential here to distinguish definitions as Philological and Logical, the first, or *verbal*, being the interpreting a word by other word or words better understood, as usual in Lexicons and Dictionaries;—the latter consists in explaining *conceptions* by analysis; both of which are of primary importance in Logic, and both dependent on Analogy; *i. e.* the disclosing of the relations of the word or thought defined. Accordingly, every definition depends on relations denoted through a series of higher relations up to first principles, which, being universal relations, *analogies* are the foundation of all connexions and of every definable identity.

242. Definitions and Propositions are hence distinguished by Logicians as *Universal* and *Particular*, and each of these again as *Affirmative* and *Negative*; but the first distinctions are incomplete and require the medium *General*, between the *Universal* and *Particular* or individual, as expressed by the term *Some* between those of *One* and *All*,—together corresponding in relation to the logical terms Genus, Species, and Individual. These and other logical terms are however am-

biguous, Universal and General being often confounded; as are also Genus and Species, while Particular and Individual are employed synonymously, and Negative and Affirmative reciprocate.

243. *Logical Definition* of a Word, Thought, or Thing consists, then, in exhibiting that to which it is equivalent, or in identifying it Individually with its Species or its Genus; its Genus with its specific difference; or, in other words, in systematising it by an equation. To be good, a Definition should be brief, clear, and sufficient. So also to form a *Proposition Grammatically* is to systematise or identify an Attributive with a Substantive by a Connective;—and every *Logical Judgment* is an equation of terms, and, when simple, is a Proposition, but, when compound, they are modes of Argument or Discourse, distinguished by Logicians as *Categorical* or universal, *Hypothetical* or particular, and *Disjunctive* or general.

244. The whole of Logic is indeed but a continuation of the same Philological process, defining and adjudging or concluding through *compound terms*, or employing propositions instead of words or *simple terms*, and so on throughout the whole of *Discourse*; whence all logical demonstration and reasoning or argument consists in duly subsuming Particulars in system under that which is General or Universal, and true; but the signification of the simple Proposition in Discourse

loses its *absolute* sense, being ever *relatively* affected by Context.

245. Good logic requires that we should dispense as much as possible with superfluous Instruments, Symbols, and Distinctions, because these remove the mind by interposition from its matter which is *thought*, the science of which is Logic. Words and terms are the necessary symbols of thought, and all that is necessary for correct logic is to insure that they be not employed equivocally ; but when the Logician substitutes *symbols for words* into which they must be translated for thoughts, he interposes *ambiguities* which weaken his logisms. They are therefore admissible only when they illustrate or perspicuate an argument or thought, which they rarely do ; and although the practice of the great Logicians sanctions their use, we all know that Aristotle mystified esoterically, and that, in fine, these multiplied logical imperinences, sunk the science and art into a play of symbols, or figured “feats of rattling swords and bucklers,” from which reason was dismissed altogether. Logic is not therefore to be raised again by the confusion that overwhelmed it, but must dismiss the medley of distinctions of terms, definitions, propositions, and syllogisms which ring changes and exercise the faculties, but become tools of sophistry, retaining only such distinctions as facilitate truth, and following closely the practice

of the Mathematician by clearing as much as possible the ground of demonstration.

246. We hold it also to be a test of correct logical distribution in all cases that the divisions and distinctions of any thesis should be both few and true,—accuracy and simplicity being no less essential in the machinery of mind than in the mechanism of matter. But we have departed from the philological to the logical station, both of which are, however, so essentially parts of the same science as hardly to be regarded separately and independently of each other; our present object is, nevertheless, philological.

247. Syntax, then, connects not merely *Words*, but also *Propositions*, and renders them members of compound propositions or *Periods* under analogous relations. Thus, as a proposition requires at least two Words, so a period cannot consist of less than *two* Propositions; but as two injure its unity by dividing it, and four or more do the same or embarrass it, the best constructed, if even it be not a Syllogism, consists, like it, of three propositions subordinated as beginning, middle, and end, or as the subject, copula, and predicate of a proposition; and the same holds also as a general rule for the more extended composition: so that the whole of a Discourse logically constituted is a continuous chain of Propositions, Periods, and Arguments linked together, particularly, gene-

rally, and universally, by copular media in subordination.

248. Such mechanically uniform construction is no more necessary, however, than that we should argue or discourse continually through syllogism in mode and figure; perspicuity is the only essential, and good taste demands an harmonious variety. Of the false taste of continuous duple-membered periods, we have examples throughout the otherwise excellent prose of Pope, laboriously imitated by Dr. Johnson, which suit the antithetical and mechanical regularity which they regarded as the highest refinement, but which soon palls upon the ear with mesmeric effect; and with respect to periods in general, good taste and understanding are satisfied where they are properly subordinated, harmoniously controlled, and expressive.

249. To secure these objects in the mechanical construction of discourse and easy conveyance of thought, no period ought to be longer than the understanding can readily comprehend, nor any paragraph longer than the voice can gracefully deliver, and the memory and attention easily sustain in connexion with that which preceded it, and in reference to that which is to follow. Nevertheless, the extremes of elliptical and parenthetical periods, and of frittered or burthened paragraphs, are to be equally avoided, and perspicuity is the prime quality of composition. In fact, to attain easy writing,

we must qualify it for easy reading and easy comprehension, and neither compel the attentive reader to retrace his steps for certainty, nor to lose his way in sandy and barren variety.

250. Yet it may be observed, as a general rule, avoiding extremes, that as three words or terms are essential to constitute a complete proposition, so a period of three propositions, and a paragraph of three periods, are sufficient to harmonious expression and clear conception, just as the Painter's triple rule contributes to similar qualities in the composition of a Picture. In neither case, however, is a monotonous, uniform, mechanical observance of these rules to be followed, and if the propositions are clear, the whole composition may be varied to the full easy exertion of thought, and widest comprehension of understanding.

251. Every *Proposition* is a whole of words, and every *Argument* is a whole of propositions, or a *Period*, whereof *Paragraphs* should be constructed with like integrity in continued Discourse. For although an unbroken page is symmetrical to the printer's eye, and authors, affecting affluence of words, run their paragraphs into pages, it is an impediment to perspicuity, and laborious to the reader, who often lays down a book in despair of a resting-place, or without an inducement to return to it. Hence the style and construction in writing are more logical in paragraphs than in unbroken pages.

252. Propositions and Sentences, then, like words and letters, are sounds significant, or signs, and have, like these, a syntaxis and double reference, the one principally to the understanding, which is *logical*; the other, principally to sense, or the ear, which is *rhetorical*, or prosodial, the science of which connects logical and philological science: for there can be no absolute beginning nor termination among correlative things.

SECTION II.

RHETORIC.

253. RHETORIC and *Prosody*, then, come in incidentally here, as a branch of Syntaxis or construction, intimately related to each other, and intermediate in Logic; and they denote the science and art of literary composition, or of combining signification with sound, so as, by the association of agreeable or discordant words and conceptions, to affect and persuade the mind, through the media of the senses, passions, and affections, logically and philologically, and include *Poetry* in its widest acceptance.

254. Now, sound significant belongs to philology universally, and we have seen that its matter or elements are *letters*. Intelligence is also connected with sound significant in *sentences*, or pro-

positions, which are the matter and elements of Logic; and between these lie *words* and terms. Rhetoric extends, therefore, to the whole of Philology,—as *literal* it is prosaic and Philosophic, as *verbal* it is figurative and Poetic, and as *discursive* it is oratorical and Logical.

255. *Philology* and *Rhetoric* differ, nevertheless, in purpose; that of the former being by sounds and signs to convey ideas and thoughts, while the purpose of the latter is, by uniting sounds and signs with ideas or images, to excite feelings and sentiments; the one refers principally to active intellect, the other to passive intellect.

256. *Rhetoric* is the logic of bias, defined by Aristotle the art of persuasion in all subjects; truth is, however, its ultimate object. In all other respects it is unworthy the attention of the logician, who regards it as dialectical; and it is properly divided in triple reference to the *Speaker*, the *Subject*, and the *Auditor* or party addressed; the latter again being either an Assembly, a Judge, or a simple Hearer: in which respect Aristotle again divides Rhetoric into three species, as *Demonstrative*, *Judiciary*, and *Deliberative*;—the first in reference to the present time, the second to the past, and the third to the future; the proper object of the first is *truth*, that of the second *justice*, and that of the last *good*, though they are employed also for their opposites, falsehood, injustice, and evil.

257. Of the three kinds of Rhetoric the *Deliberative* is for persuasion or dissuasion,—the *Judicial* for accusation or defence,—and the *Demonstrative* for praise or blame. Rhetoric is, therefore, a popular art and not a strict science, being a compound first of *Analytics*, a part of logic, secondly of *Ethical Politics*, and, thirdly, of shuffling, evasive argument, advocacy, or *Sophistry*,* and thence liable to all the abuses of Debate and Oratory, and admirable only in aid or defence of Truth, Justice, and Good.

258. What, then, should be said of the master in any art who should teach his scholars, instead of the accomplishment of great works, the tricks and subterfuges of art, and how to circumvent and destroy the works of others? For such seem to have been the chief ends in the arts of the Rhetorician and Logician. To overturn competitors is not to win the race. Yet the practice of the Greek Sophists has continued to infect modern advocates and administrations to the subversion of truth and logic.

259. Although Rhetoric and Logic have a common object, the matter of rhetoric is philological through sense, and adds persuasion to reason which is the matter of logic. Rhetoric also employs Enthymems, or imperfect and immediate arguments, possible and probable, as Logic employs Syllogisms

* Arist. "Rhet." ch. iv.

and perfect arguments, uninterrupted media and necessary truth; every way of attaining which is estimable, and the proper end of Rhetoric is to convey truth to uncultivated minds, as that of Logic is the conviction of reason.

260. Words, thoughts, and things, are alone attributable to all subjects, and their Sciences are in virtue thereof solely of universal application; and if Rhetoric, as an Art, differs from all others in this respect, and is thus also of universal reference, it is because it involves both the science of words and of thoughts, and is thus intermediate to and connects both Grammar and Logic.

261. Aristotle analyses the art remarkably, in the platonic manner, through triple analogy. Thus he refers rhetoric proof, distinguishing the artificial from the natural, to the *Orator*, the *Auditor*, and the *Oration*, upon each of which he enlarges, assigning to the Orator Actions, Manners, and Qualities, to the Auditor the Passions and Excitabilities, and to the Oration conviction through Ideas, Examples, and Enthymems; in all of which truth is subjected to persuasion, and Rhetoric is shewn to be an offspring of Logic and Language, in political and ethical connexion. The Syllogism and Induction of Logic are converted into the Enthymem, and Example in Rhetoric,—the Enthymem being an imperfect Syllogism, and the Example a partial Induction, both resting on simi-

litudes which fall short of perfect Enalogy or parity of reason, which ought to be the established basis of all logical argument, and all rhetorical persuasion. Our object here is, however, only to mark the place of Rhetoric between Grammar and Logic, and its logical foundation—not to teach the Art, admirably unfolded by Aristotle with a grasp of intellect anticipating all subsequent attempts.

262. The simplest rhetorical effects are those of Letters, or *alliteration*, principally with regard to sound; and there are three kinds of alliteration: one *rhythmical*, and *in part rhythmical*, arising from the repetition of the same letter or sound; another, which springs from the *melody* of different letters or sounds succeeding appositely; and a third, which arises from the *harmony and contrast* of different, and even of discordant sounds: all of which are employed for the purposes of *expression* and persuasion.

263. Most languages afford examples, and our own abundantly, of words expressively significant through natural *sounds*; such are, O!, Hiss, Whisper, Roar, Rough, Smooth, Harsh, Hard, Soft, Silk, and innumerable others.

There are also words significant through natural *figures*, of which the interjection O! and the words Zigzag, Serpent, &c., are instances. And some have traced the figures of letters to the forms of

the mouth in articulation, of which B is an illustration. All of which depends remotely on the same original elements. Words and names arise also through relation from the natural calls and cries of animals, as *Neigh* from the Horse, *Low* of the Ox, *Bleat* of the Sheep, *Bark* of the Dog, *Mew* of the Cat, *Cackle* of the Hen, &c., which are but abbreviate imitations of natural voices. Mimicry, Gesture, and Action, go far also in conveyance of thought, and come even within the bound of argument by imputation and inference, whence Language and Logic are as wide as Signification.

264. Amid the infinite *variety* under which we view the universe, physical, sensible, and moral, there are an evident *uniformity* among its individuals, species, and genera—an intimate and reciprocal relation—and a boundless and indivisible gradation; and this uniformity, relation, and gradation, are necessary, universal, and complete, constituting a grand and beautiful whole, whose parts are in strict accordance, or analogous, whence all the powers of rhetoric in *sound*, *measure*, and *figure*: the two first of which address themselves principally to sense, and the latter to the understanding. The chief power of rhetoric lies, therefore, in giving figure to these similitudes of the universe; and in the justness of its figures, or rhetorical truth, so to call it, lies all its value in

exciting or determining the mind : but when its illustrations contain no analogy, no true similitude founded in nature, they are false, anti-logical, or sophistical, and lead to error only.

265. The simplest rhetorical sign, the *Metaphor*, expresses analogy, and almost the whole of Language is metaphorical, indeed the whole consistence of signification is analogous ; and as Logic is but a stricter regulation of discourse, so is it conclusive only through a strict Analogy.

266. In fine, *the universe is a Logical whole*, which, if we had but adequate signs or language, would appear as entirely and infinitely analogous as Number, and perfectly related and constituted throughout, physically, metaphysically, and mathematically, by its Divine Author—arithmetically, geometrically, and mechanically—in number, weight, and measure—time, space, and motion—in Unity.

267. It is this Universal Analogy which enables the Poet to form figures of speech, to construct metaphors and allegories, with such beautiful and corresponding consistency between the symbol and the thing symbolised, and to give them all the force and distinctness of contrast by *antithesis*—the light and shade of figure and sentiment. It was this also which enabled the ancients to animate every part of nature with like characteristic consistency, and to constitute them Gods ; and it is

this, again, which renders their whole mythology so poetical, and so applicable to all the invocations and allusions of the Poet.

The same Analogy gives effective wisdom to fables :—

“ Whence ev’ry object of creation
Can furnish hints for contemplation,”—

affords signification to the symbols and figures of fine art,—supplies moral power to proverbs,—and legalises the inferences of Logic.

268. The figures of Rhctoric, or tropes, as they are called, are comprehended under three general forms—the *Metaphor*, *Hyperbole*, and prosopopœia or *Personification*, which are severally related to the three chief Disciplines; metaphors to *words*, hyperboles to *quantities*, and personifications to *images*, or figures of thought: all of which are employed to *elevate* or *degrade*, through quality, quantity, or relation, the prime categories or universals of logic with which rhetoric is immediately conjoined.

269. We might here expatiate upon a branch of our subject, so naturally and artificially replete with our peculiar regimen as *Rhetoric* is; there being no subject more capable of being cast into system analogically, and none with more advantage to its existing state, abounding with distinctions, the irrelevancy of which has subjected it to the reproof of the satirist,—that

“ A Rhetorician's rules
Teach nothing but to name his tools.”

270. Rhetoric refers to letters, words, and language universally, and therefore, in its widest sense, comprehends grammar, poetry, and oratory ; and it may be called painting with words, and, like painting with the pencil, is distributable into *disposition*, or grammatical composition—*elocution*, or poetical colouring, the “ *Operum colores*” of Horace—and *delivery*, or oratorical expression. A fourth division, common to all arts and disciplines, and belonging equally to painting and rhetoric, is *invention*.

271. Again, of this distribution of rhetoric, disposition or composition divides into an *exordium*, or introduction—a *narration*, or argument—and a *peroration*, or conclusion ; a beginning, a middle, and an end, which have similar subdivisions. The first particularises and defines, the second generalises and argues, and the third universalises or includes, in logical relation.

272. So, Elocution comprehends *contrast and harmony* in the words and colouring, *correctness of composition*, and *embellishment of tropes and figures* ; and, finally, delivery with expression consists in *emphasis* or strength, *character* or manner, and *pathos* or passion : for the effect of fine composition depends upon delivery, and that is written well in vain that is not well read. Each and every of these involves somewhat of the others.

273. The middle station of *Rhetoric* in the logical Trivium adapts it to sensual relations, whence *Oratory* is seasoned analogously with the elements of gustatory sense, Sweet, Acid, and Bitter;—Sweet in soothing praise or panegyry,—Sour in pungent sarcasm and keen satire,—Bitter in denunciation; and these also in endless commixture, and variously affected by men.

274. To illustrate, not to prove, and to excite the mind by true feelings and sentiments, is, upon the whole, the proper office of Rhetoric. To demonstrate and convict belong to Logic; but since these powers of speech are often engaged with great force in misleading the mind, and rhetoric is the common resort when reason fails, verbal eloquence is ever to be entertained with a suspicion proportioned to its floridness. Its most legitimate office is to animate the fictions of the Poet.

SECTION III. •

POETRY.

275. POETRY is a rhetorical art, the purpose of which is to delight. In this art more especially, words involve, with signification, rhythms, harmony, and melody; whence *verbal quantity*, or time and rhyme; *epithet, or quality*; and also *metaphoric similitude, or relation*.

276. To verbal quantity, or cadence, belong the *rhythmus* of verse; and this is determined by *Accent*, *Emphasis*, and *Measure*.

277. Rhyme marks the verse and distich, or double verse. A stop generally marks the hemistic, or half verse; which, again, is bisected by accent, which marks the feet and distinguishes the time—the *arsis*, or rise, from the *thesis*, or fall, of which they are constituted.

278. The fact, that accent and emphasis are even more essential to logical signification than to sound, has been overlooked by writers on prosody and orthoëpy, who attach them to the harmony of language in measure and period only.

279. As to the melody of *Rhymes*, whether single, double, or triple, they are *unisons* merely, whence the multitude of poets; and the easy power of rhyming, to even a common ear, indicates how few the number of radical sounds must be which constitute a language: and it would probably be found, upon thorough investigation, that the number of rhymes of well-distinguished sounds therein hardly exceeds the letters of its alphabet.

280. Accordingly, the first book of the “*Iliad*,” as translated by Pope, the most eminent of English rhymists, consisting of 780 verses, contains only about thirty rhymes of distinctly differing sounds, founded upon the following monosyllables, singular, plural, or inflected, in three classes, as made vocal by I, O, or A, as follows:

		I, ie, ee.			
View,		Sight,		Reign,	
Reveal,		Fire,		Rest ;—	
Wise,		Spring,			
O, oo, ou.				A, ea.	
Bow,	Mourn,			Man,	Share,
Down,	Strove,			Stand,	Grace,
Doom,	Store,			Heav'n,	Day,
Wrong,	Cloud,			Spread,	Rage,
Son,	Broke ;—			Slave,	Art ;—

which occur with continual interchange.

281. The adaptation of homotonous words to each other, or rhyming, therefore, draws little upon the powers of either memory or sense in our language ; and it is capable of being reduced to a very simple art, founded on a tabular arrangement, upon the plan of the preceding Alphabet, of which, also, the primary vowels may be the roots ; and it would become a useful adjunct of English prosody.

282. This is a relation of rhyme that may merit the attention of the Harmonist or Musical Composer, no less than of the Poet. As to dissyllabical, compound, or double rhymes, it is doubtful if there be any such in use, or if the correct ear can tolerate them : thus, one of Shakspeare's characters humorously complains that *Ba-by* is the only rhyme to *La-dy*, and *Sil-ver* is a perfect double rhyme to *Pil-fer* ; to render them admissible, however, the second syllables, *by* and *dy*, *ver*

and *fer*, which are redundant, should not rhyme, but must be *identypical*: thus, Milton,

“ Straight mine eye hath caught new plea-*sures*,
Whilst the landscape round it mea-*sures*.”

L' Allegro.

Such are, therefore, more properly *penultimate rhymes*.

283. Finally, the prosodial and rhetorical effects of *sentences* add to the properties of words, the period and poetic measure, and the beauty, variety, and significancy of the figures, or analogies of conception, called into action with all the play of thought. Thus, rhetoric and prosody run through the material and sensible to the intellectual and logical.

284. *Poetry* and *Prose* are opposed as extreme forms of verbal composition or discourse; the first of which merely *symbolises* knowledge, and is allowed to be more antient than prose, which *literalises* it, just as *hieroglyphics* preceded *letters*; hieroglyphs being of concrete, but letters of abstract signification. Hence, the first is more technical; the latter, in both cases, is more scientific, logical, and philosophical. They, however, compound, in a middle style, between poetry and prose, which has, especially, the appellation of *rhetorical*.

285. We accordingly find, that philosophy made

little progress ere it was delivered in *Prose*;—that it was previously symbolical and mystic only, and Suidas, Laertias, and Theopompus, assert that Perecydes, the founder of the Italic school, was the first who treated of the Gods, and nature of things, in *Prose*, and that preceding philosophers were Poets.* Nor was it till the descendants of this Pythagoric school gradually banished the Rhetorical arts from Philosophy, that Logic was established in form and as a science, progressively from Zeno Eleates to Aristotle. There is less need, therefore, for any lengthened discussion of an art so remote from a logical purpose as Poetry is, and of which it is here simply requisite to mark the place and relation.

286. As Syntax comprehends the various literal, verbal, and sentential powers of words, in the several forms of composition, and the various manners of employing them in the communication of thought, denoted by the general appellation of *Style* or *Diction*, but principally with regard to prose, this latter is a subject peculiarly belonging to this branch of philological science, and is of the highest importance as instrumental in Logic.

* See Theop. Gale, vol. ii. p. 120.

SECTION IV.

STYLE.

287. *STYLE*, or *Diction*, involves both Rhetoric and Poetry, being the power and manner of communicating or conveying *thoughts* through *words*, and has, like the whole of philological science, a double reference, or two extremes; the one of which refers to *signification*, or meaning only, the other which refers to *sounds*. The one designed to instruct, the other to delight; the one perspicuous, the other florid; the first philosophical, the latter poetical; this sensible, that intellectual; in fine, the one belonging to thoughts logically, the other to words philologically; the ultimate extreme of the one being poetical and rhetorical, and that of the other prosaic or literal.

288. Accordingly, words, on the one extreme, are either expressive to the mind or harmonious to the ear, and in their use one or other of these must predominate; while Style, as it regards thought, on the other extreme, is either *historical* or *memorative*, to record; *poetical*, *rhetorical*, or *imaginative*, to delight; or *dialectical* or *rationative*, to convince: the extremes of which again coalesce, and may be distinguished conjointly as *didactic*.

289. These modes of diction or style, which are simple and generic, are, however, rarely called into strict and uncompounded practice, but mix according to the nature and relations of the subject, and the endless variety which characterise and individualise the styles of different writers.

290. Thus, on the loftiest of all subjects, the religious or theological style is compounded variously of the dialectical, or philosophic, the poetic, or rhetorical, and the historic styles; in which, nevertheless, the first of these should predominate and characterise its delivery; for the majesty of the subject is intellectually incompatible with the decoration of language, and becomes most sublime and impressive when delivered with simplicity unadorned. Yet, in levelling this subject to the infirmity of the human faculties, so as to penetrate the soul with truth through the heart, or to warm the heart through the mind, it may be sometimes necessary to resort to all the persuasions and charms of verbal eloquence. The like composition, regulation, and latitude of style, belong also variously to inferior subjects.

291. From these principles it follows, that the style of literary and oral composition should be adapted to the design either to instruct logically or delight sensibly; if to delight or amuse only, then must there be a sacrifice of signification to sound and poetic beauty; if only to instruct, then must all other things be sacrificed to logical per-

spicuity — the eloquence of thought ; but if, finally, the design be to persuade, and to blend amusement with instruction, the delectable with the profitable, then must the style be more or less florid, or perspicuous, according as the design may be more or less to delight, to persuade, or to instruct and convince. The first case will afford the *poetic style* ; the second, the *logical* ; and the last, the *rhetorical, eloquent, or oratorical* ; which, again, have each their extremes and mean : thus, the *free style of oratory* is a mean to the *simple* and the *sublime*, and these may be variously compounded.

292. If this distribution be correct, there will be no difficulty in forming a critical judgment of the propriety of style in any work, according to the design of its author ; and, since readers are prone to amusement rather than to instruction, there will generally be found a corresponding failure in style on the side of floridness and tumidity.

293. Of the *poetic style*, which embraces the whole ground of literary amusement and eloquence, which address themselves to the understanding and passions through sense, and comprehend, therefore, a wider sphere than either the philosophic or historic styles, which are didactic, and divide between them the simpler ground of instruction, we need not here much inquire, since it has little connexion with a logical purpose,

and will again fall under our notice. This style has also principally occupied the philologists, and has been amply unfolded in many celebrated works of the rhetoricians, while it has almost entirely usurped the ground of this science, to the exclusion of its correlative branches; so that it is to be feared the *poetic and rhetorical style* has had too much influence in philosophy, and that, ere we can make any considerable advances therein, it will be necessary that our taste should be amended with regard to the style in which it is too commonly delivered.

294. The Poetic style has been distributed by the most eminent Rhetoricians triply into the *Sublime*, the *Moderate*, and the *Plain*, or the *Lofty*, the *Level*, and the *Low*; and Virgil has been cited as affording examples of each distinction; of the first in his "*Æneid*," of the second in his "*Georgics*," and of the third in his "*Bucolics*."

295. Poetry, in its practice, gives flexibility to language, and facilitates the employment of words; it is, therefore, an excellent discipline, more especially in blank verse, both epic and lyric. Without having had some exercise therein in rhyme, measure, and the choice of words, few prose writers will excel in harmony of composition; while the prose of the poet will be more apt to fail in the matter or thought, than in the manner or language.

296. The illogical effect of this art upon prose

and didactic writing, is that of influencing thought by addressing the ear and imagination only ; for these are the qualities of the most successful productions of the muse. To play upon the borders of the higher faculties of the mind, without permanently entering them, appears to be the chief aim of the poet's art ; nevertheless, we do not assert this in any other than a relative sense : for, without some degree of higher intellection, imagination itself cannot be effected.

297. The middle style in the present view, or the *historic style*, though its main purpose is instruction, partakes somewhat more of the eloquent, poetic, and pleasurable, than the philosophic style does. The first office of the historian is to record *facts* : if, therefore, he adopt the language of romance and poetry, he adopts the false medium of *fiction*, subjects his fidelity to suspicion, and perverts the historic design. In the genuine historic style, therefore, poetic license should be subordinated to philosophic truth ; as, in the poetic style and oratory, truth is subordinated to imagination and fiction.

298. The writers who make romances of history are, therefore, story-tellers, and, however entertaining their fictions may be, are to be regarded as corruptors of history, who, by pampering a mendacious taste, destroy the natural, healthy appetite for truth, and the moral and political regard which is the legitimate object of history. And although

we tolerate its practice in a Shakspeare, a Homer, or a Hesiod, it must be because, without violating the chief facts of history, they characterise its individuals and generalise its moral truths for all ages.

299. Yet such is the love of fiction, and such its popular regard, that the ablest literary purveyors are publicly encouraged, and rewarded with riches and honours, to debase intellect, and prostitute talent in corrupting and degrading literature, taste, and truth.

300. Fact and fiction, history and poetry, truth and falsehood, harmony and discord, are analogous pairs of extremes, of each of which the intermedia constitute an infinite series; fact, history, truth, and harmony, are reciprocally relatives, and there is nothing absolute in their opposed extremes. Hence, as discord is defective, or redundant harmony, so is falsehood defective, or redundant truth, and so of the rest; for absolute falsehood, if it were possible, would obtain neither credence nor currency.

301. And thus, also, poetry and history combine. Witness the ancient fables and tales of the East, which, in the garb of fiction, bring us acquainted with moral truths; and the modern romances and novels of the West, which envelope falsehood in the garb of fact, or falsify truth by fiction: the first, which excite the imagination to the reception of truth; the latter, which fill the

mind with false representations of reality. So much for the middle, or historic style, between the poetic and philosophic.

302. If, then, philosophy regard only truth and instruction, every species of poetic, or figurative language, must be either sacrificed, or subordinated in a purely *philosophic style*, the first essential of which is perspicuity. As perspicuity of expression is the chief essential of the philosophic style, so is perspicuity of thought the very essence of philosophy itself; and both these are promoted by brevity and simplicity.

303. In the choice and combination of words for instruction, according to the true aim of philosophy, the most eligible are those which are most expressive or significant; and of these, those also which are most generally understood: hence, the ordinary native terms and common construction of a language are preferable to those which are uncommon and exotic; nor should a metaphorical word be employed in preference of one of literal signification, the equivocal being always in some degree obscure.

304. It is, in this respect, particularly expedient to the advancement and unity of the sciences, that the technicals, which keep asunder related sciences, should be, as much as possible, assimilated or dispensed with; and that the universal philosopher should employ the most analogous and comprehensive terms and expressions.

305. It is essential, also, to a clear conveyance of thought, that he who communicates, and he who receives, should understand words alike; a paucity of ideas in the receiver may, therefore, become an insurmountable bar to the right understanding of the clearest composition or discourse: and those who are accustomed to apprehend through excitement of sense rhetorically, will not comprehend propositions and arguments addressed in precise language immediately to the understanding.

306. The sum of Aristotle's doctrine concerning *Diction* is, that *its excellence consists in perspicuity without meanness*. To the *unusual and metaphorical* employment of words he attributes *elevation* of diction; to the *common and literal* use, *meanness and perspicuity*. To produce *clearness without vulgarity* depends on *extensions, contractions, and changes*; *unusually*, to give elevation, without deviating entirely from *ordinary usage*, to which clearness belongs. And in the uncommon use of words to observe moderation and propriety so as to avoid becoming ridiculous. The highest excellence consists in *a happy use of metaphor*, a quick discernment of Resemblances being a certain mark of Genius.* Such is the Stagyrte's doctrine on Poetic Diction so far as it is applicable to Prose.

307. The three genera of style, as Historic,

* "Poetics," P. ii. sect. 26.

Poetic, and Philosophic, have many intermediates and compounds adapted to every coincident variety of subjects, and requiring as great a variety of subordination, and harmonising according to taste and judgment; whence the variety and peculiarities of style by which the compositions of writers are distinguished.

308. Such appear to be the analogous relations of Style or Diction in a *philosophical* view; but, regarded *logically* and *noologically*, they take a different relation; and it was in these latter views that Aristotle held *Poetry* to be more *philosophical* and more excellent than *History*, because Poetry is chiefly conversant about *General truths*, and History about *Particulars*, to which we may add that Philosophy concerns *Universals*; which arrangement is correct logically and rhetorically, and coincides noologically with the subordination and harmony of the intellectual faculties, of which *Memory* is principal in History, *Imagination* in Poetry, and *Reason* in Philosophy.*

309. Whatever is ostentatious or artificial in thought or expression, is inconsistent with the native simplicity of philosophy. Hence, all parade of learning and science is as destructive of the aim, as it is unworthy of the dignity of philosophy, or as affectation of mystery is beneath it; nor is even redundancy or change of terms, at the expense of

* See Bacon, "De Augmentis Scientiarum," sect. 1.

perspicuity, however agreeable rhetorical diffuseness and variety of expression may be to the ear, to be tolerated in a style purely philosophic, the sparkling variety that tickles the fancy of the thoughtless trifles with the rational mind.

310. In discursive composition both writers and speakers employ extreme terms, positive, negative, and superlative, where they ought, in logical strictness, to use relative and comparative ones only. But these, though conventionally understood by readers and hearers, lead the uncritical into error, and the uncandid into controversy.

311. From this excess springs a greater logical evil, whereby writers, and especially orators, affecting powerful argument, *utter more than the truth* that *as much as is meant* may penetrate ordinary minds and be understood; whence the logical mind is compelled to understand *less than is expressed*, for truth of apprehension;—whence springs endless debate and disputations, sectarial, litigious, and logical.

312. This logical vice is poetical, puerile, and barbarous,—is of Eastern origin, and early story-telling times;—an instrument still between ignorance and imposture. To the logical mind hyperbole is unprofitable lying, and an accurate style, governed by the precision of truth, is no less the aim of literary refinement than of morality. True, soul-stirring eloquence, is the eloquence of thought and truth, which, though independent of sensual

emotion, harmonises naturally with pure, elegant expression, and is not inimical to the images and illustrations of poetry duly subordinated and understood.

313. Eloquence is, in some measure, a natural faculty not unknown to savages, who often excel therein; fine writing is but this faculty ruled by art, and delivering itself by the hand instead of the tongue, to the eye instead of the ear. But eloquence is always allied to poetry and sense, and is thence an unfortunate faculty in logic and philosophy; unless it be entirely subjected, or subordinated to intelligence, as distinguished from sense, and then, indeed, it sheds a grace upon philosophy which enhances its satisfaction to the mind. In philosophy, however, it is to be deplored that eloquence too commonly passes for science, being mistaken for logical acquirement; but truth alone is the just eloquence of philosophy, and without it the finest composition is, to the logician, but babbling and vaniloquence.

314. We may venture further even to assert, that the genuine eloquence and poetry of language is *philosophic truth* (for the sublime, the grand, and the beautiful, all lie within the field of philosophy); but when we are unable to reach this perfection of truth and reality, we content ourselves with fictitious seeming, or *poetic truth*; truth being essential to the mind, which rejects whatever comes without its appearance. Accordingly, the

rude language of early society is highly figurative and poetical, while genuine philosophy is simultaneous with accuracy of language and logical refinement of thought, for which poetry prepares the way. We need not instance this among any savage people, nor cite Ossian as an example: Homer and Hesiod were before Pythagoras and Plato; the latter of whom was called poetical because he dramatised Philosophy, and decorated her with a fictitious garb.

315. To think correctly, and deliver perspicuously in suitable terms, comprehend the whole excellence of writing; and perspicuity is throughout the test of a logical and pure philosophic style. This is true, even to the very *letter*, of which the most distinct is the best; and in the pages of philosophy nothing ought to be admitted that has not a meaning in useful or necessary connexion with its matter, however it may be apparently justified by the prejudice of custom or authority: while, on the other hand, every possible aid, even of matter, mechanism, and graphic art, is to be adopted which may give clearness of signification, and facilitate the conveyance of thought. Yet hence all ornament, and whatever is multiplicitous or superfluous, either in matter, form, or manner, are equally to be rejected in the recordings of philosophy and science, which thereby acquire simplicity and harmony, in place of gaudiness and complexity; strength or power, in place of magni-

tude or extent; and dignity in place of ostentation.

316. False taste and a propensity of writers and orators to hyperbole and bombast, have led to the employment of superlatives and sonorous words on trivial occasions, till it has become, by a returning tide, a maxim of good writing to use simple, obsolete, and colloquial language; and it will be well, in this case, if fashion escape the extreme of colloquism, the affectation of idiom and vulgarity.

317. An opposite pedantry, exceedingly barbarous in composition, and never practised by those antients whose works are distinguished as classic, and allowed to be the most perfect models of style, is the introduction of foreign words and phrases adverse to perspicuity. These, for the most part, violate time and place, interrupt the sense, and injure the harmony of composition, even to those who are acquainted with the languages introduced; and to others they are just as absurd and more unmeaning than the text might be if such words were struck out altogether, and blanks were to supply their place.* Such practice reproaches the native language, is in bad taste, whether in writing or speaking, and ought not to be employed but from necessity, or as a cover for indecency. This practice, and those of quotation and annotation, will never, therefore, be indulged in ostentatiously

* Arist. "Rhet." B. iii. c. I.

by a chaste writer, nor employed in any case but as useful and expedient auxiliaries. Composition, to be good, like a good picture, must be free from every impertinence.

318. To measure periods, to distribute words in due rhythmus and cadence, to harmonise expression to the ear, by rendering the sound, as it were, an echo to the sense (and these with entire subjection to perspicuity), are perhaps the only licenses allowable in a pure logical and philosophical style. Naturally and happily, however, harmony of language and perspicuity of thought unite in favour of a philosophic style; which coincides with this universal philological maxim—that a just and felicitous appropriation of expression is the essence of a good style, consisting, as defined by Dean Swift, of nothing more than proper words in proper places, and flowing, like Denham's Thames,

“ Though deep, yet clear; though gentle, yet not dull;
Strong without rage; without o'erflowing, full.”

Which is itself an eminent example, and has been felicitously attributed to the diction of Plato. A good, or musical ear in the writer, is however indispensable, in all cases, to a harmonious and perfect style; as a correct comprehension, feeling, and a good voice, managed in a high, low, or middle pitch, according to occasion, are to its perfect delivery in reading or speaking.

319. Yet are not our preepts concerning the philosophic style, any more than are those of our philosophy itself, to be understood in an absolute, but only in a relative sense, because philosophy, however pure in its origin, form, and reason, has in all its developements some illustrative matter of a memorative and imaginative character, and therefore involves in its delivery something *historical* and *poetical*. Hence, in every kind of writing, there needs some mixture and temperament of the three modes of style, and some call upon judgment, taste, experience, and practice, in adjusting them to each other harmoniously; nor ought the philosopher to reject, absolutely or contemptuously, all deference to custom and popularity: for beauty in itself, and even fashion, when they do not eliminate a higher purpose, are worthy to be regarded as objects of good sense and taste.

320. We may, however, regard as maxims, that any employment of figurative language or ornament is illegitimate in the diction, when the matter to be conveyed is purely scientific, or philosophical; and that vice, in the philosophic style, is ever on the side of ostentation and tumidity: nay, it is even here, as in things material and artificial, wherever we observe an ornament we may suspect a defect. Nor is it, perhaps, less than a law of good taste, that the only plausible use of ornament is for the purpose of hiding a deficiency, or disguising a deformity, whence the beauty of simplicity.

321. Rigidity of style or construction will, nevertheless, be avoided by writers of mature taste when strict argument, or demonstration, demands not undeviating signification, or sense, and when the severity of thought may be relaxed with advantage by a judicious, chaste, and significant variation of style; while extreme floridness savours of juvenility and effeminacy, as much as aridness and the total absence of the blossom do of age, unfruitfulness, and decay.

322. But, after all, the writer who expends his powers too anxiously upon words and construction becomes exhausted for thought, and negligent of the logical matter of his work. Style is his matter, to captivate sense is his object, and he accomplishes his end without effecting, or reaching, the understanding of his reader; hence embellishment of style, admitting all its attractions, is, and ought to be, last in the literary office of the true Philosopher, in whose class we include also the Divine.

323. The logical and philosophic mind, fraught to the full with thought, delivers itself in a style brief and comprehensive; on the contrary, a paucity of ideas, or knowledge, is the foundation of a verbose and tumid style. Readers and Critics receive either with condemnation or applause, according to their powers, and betray the measure of their own minds in their judgments of the works of others.

324. The foregoing remarks are delivered solely with reference to what may be called the *literary styles*, which branch into many varieties, all of which are addressed by writers invariably to the learned, in which the literary are distinguished from the *colloquial styles*, which employ the current language of a people; between which there is a third, or *illiterary style*, adapted to the illiterate, the perfection of which consists in the clear and forcible delivery of common sense in coarse expression; and it is a style of great power and compass, equally comprehensible by all minds, whether high or low, learned or unlearned.

325. Of these styles the last, being of widest application and the lowest in its aim, is also probably of easiest acquisition, and at the same time fittest, also, either for use or abuse. Its strength is hempen—the strength of coarseness, and not silken and refined: the perfection of language is, however, to be strong without coarseness, resembling the finest textures of the loom. The first and opposite style is the universal style of literature, in which writers addressing the learned with all their learning, and aiming upward, are below their object; while in the other, and less erudite manner, which addresses itself to the illiterate, and with a downward aim, the position of the writer is comparatively more elevated, authoritative, and commanding.

326. Such a style, addressed to the passions, is

of great force, and when delivered in a confident manner, becomes oracular and irresistible to the uncultivated, and ensnaring to the cultivated mind: for he who delivers falsehood with assurance, will obtain more attention and credence from the many than he who delivers truth with diffidence; and as confidence is generally assumed for maintaining error, and truth is usually attended by simplicity and diffidence, we have sufficient reason for the guard of correct logic against a confident eloquence of any kind: and as much so in literature as in oratory.

327. To the sensual variety of style belong those of slang and levity adapted to banter and ridicule, which, however seasoned with humour and quaint wit, are to be regarded as sophistical degeneracies at variance with good taste and intelligence; and a judicious writer will equally avoid the degrading of his subject by a low style, as he will shun the ridiculousness of a false elevation. Words, like the current coin, are representative of value to the wise; to the ignorant they are value itself, whence the power of both over vulgar and mercenary minds.

328. Upon the whole, it may be concluded, that the best general literary style is that which, without becoming either colloquial or quaint, taking a level and middle aim between the pedantry of the one extreme and the licentiousness of the other, delivers itself without excess of confidence, or of

diffidence, in a simple, unaffected, and pure dialect. The style, indeed, which best accomplishes the conveyance of the writer's thoughts and sentiments will ever be the most pleasing and the best. But if we have dilated more upon this head than may seem consistent with the simplicity of outline, we could not well avoid some discussion of a subject so enticing, and essential to right teaching, logical thinking, and the communication of knowledge.

329. To conclude: Language, which comprehends the entire subject of this first part, has three respects, coinciding with the *trivium* of the schools; the first, to words and construction, which is *grammatical*; the second, to figures of speech, which are *rhetorical*; and the third, to argument, or discourse, and this is *logical*: to the outline of which science we proceed. Every science and every subject is of triple reference to its matter, its means, and its end. The matter of Logic consists of signs and signification, of which we have treated: its means are the faculties and forms, or instruments of logic, to which we proceed; and its object and end, never to be lost sight of by the Logician, is TRUTH.

PART II.

NOOLOGY:

OR,

THE ANALOGY OF LOGIC

INDICATED.

NOOLOGY:

OR,

THE ANALOGY OF LOGIC.

CHAPTER I.

SECT. I.

INTRODUCTION.

330. NOOLOGY, or the Science of Mind*—the *Subject* of LOGIC—is co-equal with the Universe, which is the *Object* of all Knowledge or PHILOSOPHY, following which we have traced the outline of PHILOLOGY, or the science of *Representation* and perception, in our preceding Part; whence we proceed from the science of Words to that of Thoughts, and to develop the outline of Logic whereon all conviction of knowledge depends: for these three we have shewn to be co-essential, and that neither can greatly advance, much less attain perfection, independently of the other two.

331. In a former universal outline, we have regarded the system of knowledge, or Philosophy,

* Metaphysically called *Psychology*.

according to the natural habit of mankind, as external or *objective*.* In the present outline we regard the same system as *subjective*, or in reference to the mind, as internal; in which view we comprehend, therefore, the science of the human mind in its universal relations, or NOOLOGY, as the proper basis of *Logic*.

332. But as in this change of position from the objective to the subjective, the relations of science remain the same under a variation of view only, it is merely expedient that we here advert briefly to the first genera of science unfolded in our *Synopsis*,† for the sake of connexion, and dwell more particularly on that branch which peculiarly refers to the mind, its faculties, and discipline; namely, the *logical* department of knowledge, in its common acceptance.

333. The *Mind* with reference to knowledge is a power of conforming itself to *Things*, *i. e.* to another power out of, or external to, the mind, and they are correlative powers which concur in *Sensation* and Knowledge as Effects and Facts; and as these are attended by *self-consciousness of the mind*, and identify Things with Thoughts, we must by universal analogy conclude that the External Power is a *Universal Self-consciousness* to which all mental and spiritual relation, all Knowledge,

* "Outlines of Analogical Philosophy."

† "Tritogenea, or Synopsis of Universal Philosophy."

Being, and Sensation belong—which is the Subject of all Objects, and the Object of every Subject, for without this there could be no communion between them.

334. But this is Ontological ground of universal Noological reference, and upon this analogy all Physical and Logical, no less than all Moral, relations depend,—all Being and Truth, no less than all Good.

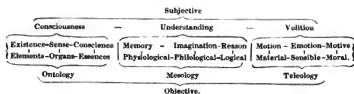
335. The reflex act, by which the mind looks inward on itself, is later attained, and more difficult, than the direct act by which it regards outward things; and hence the interpretation of its faculties and their relations is not only difficult of acquirement, but also difficult of significant conveyance; for herein the *subject*, being also regarded as the *object*, the *view* becomes indistinct, and demands intent observation, reflection, and clear representation. Had we, however, a true and entire external Objective system, wherewith the internal Subject cannot but conform, these difficulties might be overcome; and it is upon such an analogical view of the plan of knowledge universally that we essay to establish our logical outline.

336. The primary genera of science, we have shewn, in our Synopsis of Philosophy, are *Ontology*, or the science of being; *Mesology*, or the science of knowing; and *Teleology*, or the science of doing: and these, consequently, embrace all

other denominations of science. But as all science is such only inasmuch as it refers to mind or intellect (of which to be, to know, and to do, are the sole comprehending attributes), and as *being* without CONSCIOUSNESS, *knowledge* without UNDERSTANDING, and *doing* without VOLITION, or will, have no meaning, so consciousness, understanding, and volition, constitute mind universally: Consciousness being pure *intellect*, Volition the *evolution of active intellect*, and Understanding the *involution of passive intellect*; the two latter concurring in Consciousness, which is *pure, active, and passive*—intellectual cause.

337. It may be added, in conformity with our analysis, that there belong three chief modes to each of the three primary faculties of the Mind, or subject; to Consciousness belong *existence, sense, and con-science*; to Understanding, *memory, imagination, and reason*; and to Volition, or will, belong *motions, or appetites, emotions, or passions, and motives, or inclinations*; and that in a Logical, or subjective view, Mind is *universal, general and individual*; and that these severally refer to *science, art, and nature*, throughout all their relations.

338. In short, so typically identical do we regard the Subjective and Objective Universe, that, without anomaly, both may be displayed upon the same ground in correlation. Thus:—



339. Ontology thus comprehends all principles and powers, in reference to Being and Consciousness; Mesology comprehends all relations in reference to Knowing and Understanding; and Teleology, all purposes in reference to Volition and Doing.

340. We infer, hence, that Nature, or existence, and Consciousness, are identical in principle—that Science and Understanding are the same as means—that such, also, are Volition and Art, as purpose;—that these are the essentials of all known things, and coincide with the universal attributes of God—the essence of all—Omnipotent existence, Omniscient wisdom or understanding, and All-benevolent purpose, or good; and that, finally, God, the all-comprehending Spirit, and the spirit or mind of man, are conformable; and consciousness or conscience, in man, is the confession of his dependence and relation to God, who formed him in His own likeness.

341. In a subjective view, also, Ontology belongs to *consciousness*; Mesology to *understanding*; and Teleology to *volition or will*, principally: we say principally, for the mind cannot act in any

way without some concurrence of the three, in which Consciousness is principal. And in all inquiries into the nature and operations of the mind itself, this subject must be regarded as an Object, whence the chief difficulty of noological inquiries; next to which is the necessity of regarding that which is relative and united as things distinct and absolute.

SECTION II.

342. If now we are asked, What is CONSCIOUSNESS? we reply, it is not so properly a faculty of the mind as it is Mind itself—the *foundation of all faculties*—common to all; neither a mere genus, nor a species, but universal. For the same reason we reply it is neither *Understanding*, which is reflective of Consciousness, nor *Volition*, which is conscious activity, but it is the essential ground of both these, and of all the subordinate faculties of the mind.

343. Neither therefore is Consciousness either *Sense*, *Memory*, *Imagination*, or *Reason*, as distinct, but it includes them all. In fine, therefore, it is nothing different from itself, but the foundation and necessary condition of all powers and faculties, nor can anything Be without Consciousness. It is the first and last, and to require anything

prior to the first or ulterior to the last, involves a contradiction—an absurdity.

344. CONSCIOUSNESS is therefore the power to know, or self-knowledge, the Logos in man taking the various forms of Intellect or Mind. Physically it is *Conception*, Ethically it is *Conscience*, and Logically it is *Conviction*. In Conviction we are intimately Conscious, and LOGIC is the science of Conviction, and its purpose is to convince, and to convey the convictions of one Consciousness to another, *i.e.* to unite Consciousnesses, or *make of one mind*. Consciousness is therefore the presiding faculty of mind, or, universally, Mind itself. Personality—the faculty to which all other faculties refer—the faculty of TRUTH.

345. "If *Self*," says a contemporary of Locke, "be both the *Subject* and the *Object* of Consciousness, Knowledge, and Perception, it is evident that Consciousness must be the most intimate of all Perceptions. And, indeed, there is no imagining any *Knowledge*, or *Sense*, and *Perception*, so truly and thoroughly intimate or so immediately present to the mind, and so much, as I may say, within itself, or so near and close to it, and as it were of a piece with it, as this is, wherein *that which perceives*, and *what is perceived*, is one and the same thing."*

346. We will, therefore, call *Consciousness* the

* "Essay on Consciousness," p. 149. Tonson, pub. 1728.

Universal faculty of the Mind whereby it understands, wills, perceives, conceives, judges, &c. As a first and universal faculty it seems to have escaped the observation of the ancient Noologists and Philosophers, and to have been brought under notice by Ethical speculators concerning the moral and religious faculty of *Conscience*, whence the term *Consciousness*, denoting it as a universal faculty, was superinduced : accordingly this author is, as far as we know, and as himself declares, the first writer who has treated expressly thereon.

347. LOGICAL CONSCIOUSNESS, the principle of Thought, is Subjective ; but there is also Objective or ONTOLOGICAL CONSCIOUSNESS, the principle of Existence, wherewith the Idealists have oppugned the vulgar conception of Matter, and assigned all external sensible things, with the whole visible Universe, to ideas of Individual Minds, with irrefragable argument, which being transferred to Ontological *Consciousness* establishes it as the sole ground of all Reality and Existence, independently of the gross assumption, or *petitio principii* of another being—*Matter*.

348. From the position of the Idealist there remains nevertheless the question, Have the sensible world and the things it contains no more *real permanent existence* than in the ideas, conceptions, and perceptions, of individual minds ? and Consciousness replies, logically and ontologically, —Yes, in the Eternal Conception of a Universal

Mind : whence it also follows that all *Life, or Individual consciousness, is no other than a correspondence with Universal Consciousness*, "in whom all live, move, and have their being," whence the dogma of the Idealists of seeing all things in God ; and all the subordinate faculties of the mind are subject to Universal Consciousness, beginning first with the will of man.

SECTION III.

349. VOLITION, or Will, is *active Consciousness*, therefore primary, and therefore spontaneous or free, the very term implying freedom ; for that can in no wise be a will that is not self-determined, and an involuntary will is self-contradictory. All disputation concerning this famous question is, however, Ethical, and our present inquiry is Logical, in which view Will is the original active power of Consciousness, as Understanding is its passive power, directing, controlling, or concurring with it, but not as the principle of its power.

350. *Will and Understanding* are the active and passive powers of Consciousness, both original and primary, and concurrent in its effects ; first, *morally* or objectively in respect to Will, seeking *well* or good ; and secondly, *logically*, or subjectively, in respect to Understanding seeking *Verity or Truth* ; the first in regard to the liberty

of the agent, the latter in respect to deliberation and reflection of the patient. They are equally active and passive powers—equally independent, although efficient in conjunction—reciprocally controlling each other, whence the so-called Moral necessity of Will, and its logical influence.

351. The *Will* is also an active faculty between, and correlative with the *Sensitive faculty* and *Understanding*, both of which are passive in respect to Will. Hence its *moral effects* in concurrence with Sense are determined by *Passion*, but with Understanding they are determined by *Reason*; as its *logical effects* with Sense are *Perceptions*, and with Understanding are *Judgments*. Thus although the faculties of Will and Understanding are, relatively to each other, active and passive, they are also, in self-relation, both active and passive, the first as determining, the latter as determined.

352. Hence the *Will, or Active Intellect*, has been properly defined “the Causality of the Mind,” in which view it has, however, been the subject of continual controversy concerning the moral responsibility of Man, terminable only through *Analogy, whereby we have shewn Cause to consist in Concurrence of Action and Passion*, and that the *Will as Cause*, is free in the first respect as *active*, and subjected or determined in the latter as *passive*; whence at once the liberty and necessity of the Will in reference to ethical science.

353. The controversy which arose from regarding the Will as Simple Cause has been one of the most lasting and momentous with which literature has been burthened and afflicted; and there is not a more important distinction, both moral and metaphysical, than this our *Analysis of Cause*, and the evident consequence therefrom, that man has *two Wills*, the one *active*, the other *passive*; by the first of which he is morally *free* or spontaneous, and by the latter *necessitated* or impelled, while, in Physics and Metaphysics, every *Cause being active and passive, and these concurrent in every Effect*, naturally sets at rest the sceptical question of the non-connexion of Cause and Effect.

354. This *Analysis of Cause* is not less important in regard to the Will in Logic, wherein *active Will* is efficient in research and argument, as *passive Will* is in reception and conviction. Yet it is necessary to regard them as one Faculty, it being, as we have shewn, impossible to separate entirely the concurrent powers of Action and Passion, because they are infinitely correlative, so that each of the mental faculties is active and passive; whence it is necessary for the Logician, as well as the Moralist, to preserve the freedom or activity, not only of his Will, but of all his Faculties. There is, nevertheless, some difficulty to the unpractised mind in adapting conception

and expression to the varying relations of these powers and faculties.

355. The Will, or practical Intellect, has been regarded as merely Ethical or Moral, but this, though principal, is by no means the whole to which the faculty of Will extends, since it involves the whole science of Ends and the entire sphere of Art, or doing, whether by physical *motion* in Mechanic Art, through sensible *emotion* in Fine Art, or through Moral *motive*, which is purely ETHICAL, as Understanding, chiefly with regard to Reason, is LOGICAL.

356. It is the *End* that governs *the Will*, and for the sake of which it acts; but of Ends the Will can have no notice but by the use of the other faculties, which are *passive*, or necessarily determined, whether they be of Sense or of Reason; the office, and *active freedom*, of Will consists, therefore, in electing and determining between them. The Will is thus a supreme power, ruling according to Law, or, as *Arbitrary*, it is the agent of all *Art*.

357. Although Volition, or Will, is thus principally a moral Faculty associated with Conscience or moral Consciousness, it is also of great Logical consideration, from the false power it is allowed to exercise in determining the Judgment and Understanding, whose office it should be to instruct the Will. The Faculty of Will is therefore of great

negative importance to the Logician to regulate and control, since it is commonly determined by the Passions and Appetites which he should entirely subject to the Understanding for the freedom of Reason.

358. But the natural Will, and Understanding, though inseparable, are opposed in power and office; Understanding being the ally and servant of Intellect, but Will is allied to and often the slave of Sense; whence men are morally good or bad according to the ruling or predominance of their Reason or their Wills.

359. The Will, by analysis, exhibits three powers,—a power of decision and determination especially called *Willing*,—a power of rejection or denial and forbearance, properly called *Nill-ing*,—and, between these, a reflex power of suspension, indecision, or indetermination, which may, analogously, be named Shifting, or *Shill-ing*, which is idiomatically expressed by the phrase *Shilli-shalli*, and the interrogative, *Shall I?* Thus, Election, Rejection, and *Sus-pension*, are various modes of Volition, comprehending the whole power and freedom of this faculty, of which to *Will* and to *Nill* are present, and to *Shall* or *Shill* is future, as tenses of the same verb, determining the grammatical distinction of the term, *Shall* and *Will*, which, in practice, are often confounded.

360. It is by the latter power of Suspension and Indecision, *i. e.* by *Deliberation*, that the Will

connects itself or concurs with Understanding and Inquiry; and as the office of Language consists in affirming and denying, interrogating and commanding, there is a philological and logical unity of Words and Thoughts, as of Thoughts and Things.

361. It is this power that Locke, in reference to the Understanding, calls *Reflection*, and makes it the second source of Knowledge, the first being *Sensation*, the source of natural, as the former is of arbitrary or artificial, knowledge; whence Reflection is to Thought what Experience and Experiment are to Sense,—the first being the exertion of active, as the latter is of passive Consciousness, and incapable of total separation from each other. Thus Reflection is the Experiment of the Mind, or internal Experience, as opposed to external and physical Experience and Experiment.

362. Hence the Will is of much more efficiency in Logic than is generally imagined, whence it has been commonly disregarded by the Logician, and consigned to the Moralist, in whose science it is the principal faculty, and we have so regarded it in connexion with Consciousness or Conscience. Yet the Will is the prime power in the *Logic of Party*, in all the *Prejudices* of the uncultivated Understanding, and in whatever *Passion and Self* can take a part; all of which are mighty in operation against Reason, vitiate the current opinions

of society, and are formidable in opposition to *Truth* and sound *Logic*.

363. The whole *Logic of Bias* is accordingly more dependent on this usurping and enslaving Faculty of Will than on the defects of Understanding, concerning which the free and honest Logician's care should be to examine how far the Will enters into any question, and to allow it only a negative voice in entire subjection to the Understanding;—excluding it from every rational inquiry, tolerating its apodictic authority only in legitimate command, and admitting its *imperative propositions* only where *interrogative* or *enunciative* ones would be inefficient.

364. Employing only *imperative Propositions* or *Judgments*, the Will recognises no other logical forms than the *argumentum baculinum*, and *induction of physical forces*, to which rulers and men are but too much inclined, and eliminate all other *Logic*; and by forcibly assuming the ground of merit, it often overrules and frustrates the objects of great talents. It is evident, nevertheless, that it is a true logical faculty, inasmuch as it has the entire and not-to-be-neglected order of Imperative Propositions subject to it, the legitimate and moral use of which the Logician ought not to call in question, but to assign it a distinct department, which may be called *Imperiology*, or the *Logic of Command*, especially on behalf of

Military Commanders and Politicians, and well meriting a thorough investigation and regulation.

365. Thus Logic is of two kinds, the *Civil* and the *Military*; the first dependent on the Understanding, the latter on the Will, which is the Military Faculty in man. But if Reason and Justice, Truth, Beauty, and Good, are ever to flourish freely, and govern Man morally, politically, or religiously, it can be only by *subjecting his Military to his Civil Powers and Faculties*, the true source of *Civilisation*, or the former will subdue Reason, Truth, and Good, morally and politically, and ultimately destroy Liberty and the *Logos* in man;—while to render “Will the chief organ of Divine Truth,” in men is diabolical.

366. As there is thus a *logical* as well as a *moral Will*, which is properly the *Logic of Authority* or Command, all Authority belongs primarily to *Reason*, from which it receives its Laws and Appointment—to teach and discipline, to order and govern, and to enforce and command. It belongs, therefore, especially to Parents and Masters—Tutors, Presidents, and Commanders—to Emperors and Kings,—but, above all, to God, who only, having perfect Reason, is perfect in Authority—the Pattern for Man—the Universal *Logos*, who rules all by His Will with perfect Reason, Power, and Beneficence.

ELECTION.

367. Between the Noological, or knowing Faculties of *Understanding* and *Volition*, or *Will*, Aristotle placed a Faculty of ELECTION,—*Proairesis** or *Velleity*, in which both Will and Understanding are conjoined, which he defines “a judicious Appetition ;” as Plato also does “a right Probation ;” and which may be called *Deliberation*,—whence *Liberty*, which they make the same as Voluntariness, “a Rational Spontaneity,” which has unfortunately been overlooked by polemics, and thrown aside by philosophers, divines, and moralists.

368. As the Understanding is for *Principles* and Truth, and Volition is for Ends and Good, so Election is deliberation both for Good and Evil, Truth and Falsehood, as *Means* for an End ; and thus Volition and Election concur in Velleity, opposed in harmony to Understanding and Reason, to which belongs *Attention*, as to Volition and Election belong *Intention* and *Deliberation*.

369. The Noological distinction of the Faculties of the Mind is not absolute but relative, analogically, Mind being, like Body, a system or unity of action and re-action, and therefore as the *Elective* or *Deliberative Faculty* is a compound

* “Proc. Theol.” vol. ii. p. 496 ; Theop. Gale, ii. p. 390.

or concurrent faculty of Will and Understanding, its existence may be questioned as an absolute and distinct faculty. In strictness, indeed, we have no absolutely pure faculty, but all are relative, and the Faculties may be multiplied by composition unlimitedly; and *Election* being the simplest compound of Thought and Action, is expedient for its chief and great *Ethical* importance, wherein Aristotle employed it; active in Determination and Self-denial, and passive in Forbearance and Fortitude; its objects being *Means*, as that of Will is *Ends*, and that of the Understanding *Principles*, although the faculty has been swamped by polemics in their lax prolations concerning "Free-will and Fate;" whence an eminent writer on the faculty of the *Will* took occasion to define the Will "that by which the mind *chooses* anything."*

§70. ELECTION is important also as a *Logical* faculty, having, like the Understanding and Will, a distinct order of Propositions appropriate to it, whereon a distinct mode of Logic may be founded; for Propositions, which are the matter of Logic, being either *enunciative*, *interrogative*, or *imperative*, and the Logic of Understanding employing enunciative propositions, and that of the Will the imperative, as we have shewn, so does the *Logic of Election* or *Deliberation* employ interrogative Propositions, according to the *Socratic Method*.

* Edwards "on Free Will," p. 1, sect. 1.

371. The *Logic of Election* is properly, then, the Logic of Deliberation and Inquiry, of great value in Education and Investigation, both when we would learn or acquire anything, or when we would *Lecture* or Teach, meriting the Logician's attention for its importance, and as an untried discipline, extending while it determines also the analogical boundary of Logic, and settling the question of Liberty and Necessity, so long in dispute with incalculable mischief throughout Ethics.

372. Hence it is highly expedient to restore this disregarded faculty to its true station in the Noological system, made manifest by Analogy and the master faculty of CONSCIOUSNESS, which assures us of the *Will* and *Understanding*—our active and logical faculties—and is, therefore, sufficient authority for their intermediate or concurrent faculty of *Election*, by which we deliberate—liberate or poise—doubt—suspend—debate—take counsel, and choose: in all of which this faculty is of the highest practical importance, and especially so in the exercise of free moral agency; of which this optative faculty is the defence, at the same time that it restrains the paramount Will, which is ever self-active at a proportionate sacrifice of the Understanding.

SECTION IV.

373. UNDERSTANDING, the third and principal faculty of Mind, is the true basis of Logic properly so denominated, although there is a Logic of Will and a Logic of Election, as we have seen. It is especially incumbent, therefore, that we determine the meaning in which we employ the term, to which a new and corrupt signification, otherwise unknown to our language, has been given by Professors of the modern schools, as a mean for introducing a new and celebrated, but infirm form of Noology.* Kant placed *Reason* as a power or faculty of the mind above *Understanding*, and *Understanding* as a like power categorically including *Sense*;†—and other Continental Philosophers, and their Translators, have adopted this part of his doctrine and signification.

374. In English the word *Understanding* has two roots, *Under* and *Stand*, and is of their conjoint signification of *Standing under*, or supporting, all knowledge; of which it is also the *Substance* [*sub-stans*] and *Subject*; and such is the truly English sense in which it has been constantly employed by the best authorities in common with Bacon and Locke, according to whom it is the eye

* See No. 53, p. 23.

† "Critick of Pure Reason."

through which the mind perceives all its objects, light, and knowledge.

375. We deem it, therefore, important to protest against the above-mentioned corruption of the term, and no less so to disavow the new acceptation of the word Reason as at variance with genuine Philosophy and Noology, contrary to correct signification and usage, and hostile to Truth; for since Understanding is the *Genus* of which Reason is a *Species*, whether regarded as a faculty, an energy, or an effect, it must be a corruption alike in Philosophy, Logic, and Language, to make Reason exclusive and inclusive of Understanding, the signification and intent of which is, we have seen, to *Sub-tend* and *Sus-tain* all truth and knowledge.

376. Accordingly, the *Understanding* includes all Perception and Memory, which refer to all impressions or effects of Sense,—all Reason and Judgment, which refer to Conscience or Consciousness,—and their intermediate faculty of Imagination or Conception, which refers to both Sense and Consciousness, and is all comprehensive.

377. We deem it incumbent also to object against the recent fashion of prefixing the article *the* to the proper name of the faculty of *Reason*, adverse to our English idiom, and to call it [*La Raison*] *The Reason*, which in English signifies *the Argument* or operation, and not the Faculty,

it is therefore ambiguous, and a needless innovation.

378. Mind is essentially a Unity, and its parts participate its unity in Triunity. Hence the *Understanding*, and its correlative Faculties, are Unifying powers ;—as *Memory*, it unites whatever is presented to it by Association and Accumulation ; as *Imagination*, it unites by Construction and Figure according to Will and Conception ; and as *Reason*, it unites according to natural order, true relation, and Analogy. Thus there are co-essential to Understanding, 1. A *Passive* or receptive power of Memory ; 2. An *Active* or conceptive power of Imagination ; and 3. A *Concurrent* or comparative power of Reason, or judgment of Relation.

379. The *Understanding* is, then, that faculty of the mind, or internal, which is distinguished from Volition and Consciousness, with which it constitutes three concurrent powers, Agent, Patient, and Efficient, of perfect MIND. And it has, in like manner, three distinct reciprocal faculties—*Reason*, *Imagination*, and *Memory*,—through which we understand, in subordination, *facts*, or effects, *fictions*, or figures of the mind, and *relations*, or ratios ; to which belong, in like order and subordination, three distinct sciences, namely, to Memory, *Historics* ; to Imagination, *Poetics* ; and to Reason, *Dialectics* : the last of which is of internal

relation and principal in Logic, being the whole, indeed, to which the common acceptation of the term Logic extends.

380. Thus, again, in Noology, or Subjective Philosophy, as in the Objective, there is an essential triplicity of parts, and a system of correlation throughout; so that not only whatever exists, but also whatever can be thought or known, is relative, and there is nothing absolute throughout the whole system of science. Hence true philosophy, though ever the same in plan, presents a different aspect as the view changes, under which a new order and new denominations of its relations arise; so that, in all such changes, we do violence, as it were, to the original. Hence some dissidences in the details of Universal Philosophy—hence, also, the difficulty of attaining a perfect system, and the unavoidable confusion among arbitrary sciences and systems; for all of which there is no other remedy than a perfect *representative system*; or, in other words, a system of *Philology*, or Language, perfectly analogous and conformable to perfect philosophy, both subjective and objective; their advancement must, therefore, be reciprocal.

381. When completeness shall be attained, there will be adequate means for conveying with ease and accuracy, as well as for conceiving truly, the entire arrangements of the universe, and of perfecting the plan of written science in conformity therewith; till which arrive, the philosophic mind must labour

with penetration and good-will, and with a flexibility of understanding that can bend the signification of terms to the view ; nor can terms or signs be more absolute than the thoughts and things they represent. The want of this flexibility of mind and language obstructs the discoveries of Science, and occasions dispute, than which nothing can be more empty and puerile ; for if either the production of Science or Language be in error, the controversialist will be much more laudably and beneficially employed in correcting them ; which is, indeed, the only object of just criticism to the rational mind, seeking truth and avoiding error.

382. It is, above all, necessary to guard against confounding and perverting the functions of the mind. Of these the *Will*, as we have shewn, too often exercises uncontrolled and unsuspected power over the Understanding,—whence little reason or argument suffices to convince *the willing mind*, while all the powers of ratiocination and of truth are cast away upon the *unwilling* ; and when the Will thus usurps the office of the Understanding, the mind inevitably becomes the slave of Prejudice and Partiality, while the reasoning faculty withers through want of exercise. Hence the necessity, if we would preserve the mind sane, and free for the acquisition of truth, that we should subdue this mastery of *Volition*, and engage it with honest *Consciousness* in the free service of *Understanding*.

383. That man in community, as well as indi-

vidually, is more determined by Will than by Reason or Understanding, is evident to the commonest observer. Were it otherwise, there would be little disagreement of mind, and no need of laws and treaties; men and nations would then readily concur in acknowledging and doing only what is right and for each other's good; for Reason and Right are one when not vitiated by Will, which is blind and obedient to passion and appetite, and all the persuasions of pleasure and pain allied to inclination, affection, and sense, and to every evil motive of the mind: to bring all which under the government of Reasoning or Understanding, for a good end, ought to be the chiefest aim in the cultivation and discipline of mind, individual and social, for such is the purpose of Logic.

384. So fertile, in other respects, is the subject of the human Will, that volumes out of number have done little toward exhausting it. Our present purpose is simply logical, and we have already treated of the logical Will, shewing that the definition which confines Logic to "the right use of Reason," is too limited for a science of universal compass that includes every faculty and instrument of human cognition, no less than the exercise of Reason as an art.

385. Then there is a logic of SENSE to which we appeal in matters of Sense; which extends also to the passious, feelings, and affections, which have their appropriate evidence in matters not simply

rational, and to which Reason has also a like limited appeal ; but it is a great logical error when these are employed in the office of Reason beyond their jurisdiction, in which way the many, neglecting the light and evidence of Understanding, argue from feelings, &c., which although for good or evil, as it may happen, are blind to every end but their own ; or, what is worse, they force *Reason* into the servitude of *Sense*, and make *Understanding* the slave of Passion and Party—the friends of Folly, Falsehood, and Fraud, and enemies of Logic, Truth, and Honesty.

CHAPTER II.

LOGICAL SCIENCE.

SECTION I.

386. HAVING shewn that the mind consists primarily of three powers, in conformity with the plan of the philosophic or objective system, and having spoken of them as distinguished, namely, of the passive power of *Consciousness*, the active power of *Volition*, and the effective, or concurrent power of *Understanding*, to the latter of which Knowledge and Reason properly belong ; we may set apart the two former coessentials as distinguished from the latter, while we determine in what it consists, and its reference to LOGIC in particular.

387. The universal rule by which the objects of science are distributed according to their correlative relations, as internal, external, and medial, belongs also to the powers or faculties of the subject or mind, in similar subordination ; and hence, again, Understanding, or the power of knowledge, has three subordinate faculties : first, principally related to the external, it has *Memory* ; in medial relation it has *Imagination* ; and in internal relation

it has *Reason* ; and to these belong relatively the three genera of logical science,—*Mnemonics*, or *History*, to Memory ; *Poetics*, to Imagination ; and *Dialectics*, to Reason : of which, setting apart the two former, we reserve the latter, to which more particularly belongs the science of Ratiocination, the art and discipline of Logic.

388. Notwithstanding we thus set apart the consideration of the sciences to which the several powers of the mind are related, excepting only DIALECTICS, which belong principally to the power of Understanding, and its chief faculty *Reason*, it is evident, according to universal relation, that all these powers and faculties of the mind are variously coessential to all its acts and effects : it is expedient, therefore, in a logical view, that we extend our inquiry concerning them.

389. All knowledge is the effect of the concurrence of that which knows, or the subject, with that which is known, or the object ; and, as man knows nothing more of objects than their effects, or facts, he having no power of transcending his system, so he is incapable of knowing any more of his own subject than its effects.

390. Now, as the elements of objective effects are powers, or efficient, which are either *active* or *passive*, the same also are the powers or faculties of the Mind or Subject, which are *Memory*, *Imagination*, and *Reason* ; from which spring the effects and energies of the subject, and such are *Perception*,

Conception, and *Judgment*; and, finally, from effects and energies spring other effects or operations of the mind or subject, and such are the modes or forms of argument. Logic involves, therefore, subjectively, the *powers or Faculties*, *effects or Energies*, and *acts or Operations*, of the mind or subject, each active and passive, of which in order.

SECTION II.

391. First, of the LOGICAL FACULTIES of the mind. In analysing knowledge objectively, we discover an external object, *matter*—an internal object, *mind* or intellect—and a medial object, *sense*, each of which may be resolved into action and passion; and they are the ground of three primary corresponding sciences—the material or physical, the sensible or æsthetical, and the intellectual or ethical sciences; and with these the primary faculties and energies of the Subject, and the faculties and forms of Logic, must correspond or accord.

392. Hence the logical mind or subject, in concurrence with external or material objects, receives and retains perceptions, intuitions, or sensations, by its faculty of *Memory*, which is passive attention in receiving, and active thought or apprehension in recollecting, what has been received or thought; thus, Memory is the receptacle of the particulars of

sense and reminiscence or recollection, which are the matter of thought ; it is therefore a *particularising* faculty, the two extremes of which, *reception* and *recollection*, are connected by *association* as a subordinate or intermediate faculty of Memory, connecting it with Imagination.

393. Again : by the concurrence of the logical subject with medial or sensible objects, which constitute the particulars with which Memory is furnished, are formed images and conceptions, by a *generalising* or comprehending faculty called *Imagination* ; which is passive in receiving or conceiving given images or ideas, as of a man or a horse ; and active in reconceiving, associating, and composing them, as in the framing of the conception of a centaur, &c.

394. Finally, by the concurrence of the logical subject with internal or intellectual objects are formed apprehensions, judgments, enunciations, and conclusions, through the conceptions associated by the Imagination from the particulars retained by Memory, by a *universalising* faculty called *Reason* ; and as Memory is active in recollecting its particulars, and the Imagination in reconceiving and combining or generalising them, so Reason is active in comprehending, judging, and concluding according to universal relations, and passive in receiving or comprehending with conviction. Hence, Reason, properly defined, is the faculty of the recognition of relations—the faculty which especially distinguishes

logical man from the irrational animals, which take no cognition of relations or genera, although they perceive the distinctions of things and infer as they are impressed.

395. As Reason is the highest and principal power or faculty of the logical mind, and is of internal relation, so Reason is more particularly an active faculty, and Memory a passive faculty; while Imagination is medial—equally active and reactive. **

396. Yet are these various attributes and distinctions of the mind *not absolute, but relative*; for in every act and acquisition of the mind each of its powers and faculties is engaged; the original powers of Will and Consciousness being essential to Understanding; and of the subordinate powers of the latter, *Memory* to collect, *Imagination* to apprehend, and *Reason* to compare and judge, are coessential conditions of every thought or energy of mind, and distinct only through analysis.

397. And, with respect to their concurrent, or conjoint active and passive functions, which all these variously possess, it is to be remarked that these principles concur inseparably; for that which is passive *acts or reacts*, and that which is active *suffers* from the patient; whence not only the superior, but also all the subordinate faculties and functions of the mind, involve the relations of action and passion, analogically; to well-conceive and understand which identity in diversity and

indissoluble co-essentiality of principles and relations universally, is the highest office of intellect, and the most conducive to knowledge and science.

398. Thus, there are three different habits of thought to which it is important to direct the attention for the legitimate exercise of the logical faculties, by one of which we exercise thought through Associations, by another through Imaginations, and by a third we do this through Relations.

399. In the first, *Memory* is the ruling faculty, and although it associates realities principally, its associations are for the most part arbitrary, and often absurd ; but in this way men retain and recall knowledges through repetition and associations, and many ingenious, arbitrary, and unsound systems of knowledge have been raised, and supported upon no better foundation than the associations of thought or ideas, the natural ground of which is physical.

400. In the second, *Imagination* is the prevailing faculty which combines even more arbitrarily and indiscriminately not only realities, but things the most fictitious, heterogeneous, and absurd ; and men of lively imaginations do not scruple to seek knowledge upon this ground, and some of the most elegant and ingenious theories and systems have been raised upon no better foundations than fancy. The basis of this mode of thinking is æsthetical and its legitimate office is poetical.

“ Her secret stores let *Mem'ry* tell ;
Bid *Fancy* quit her fairy cell
In all her colours drest ;
While, prompt her sallies to control,
Reason, the judge, recalls the soul
To Truth's severest test.”—AKENSIDE.

401. In the third mode of exercising thought, *Reason* is the governing faculty by which men seek and attain knowledge and science upon the ground of their *true relations* only, according to the Universality of Nature. No true system can have any other foundation, and no other is truly logical or philosophical.

402. We do not mean to assert that either the associations of Memory, or the constructions of Imagination, are to be totally discarded from the operations of the mind, but that they are only to be used as aids in subordination to the government of Reason and true relations in all things. It is their predominance and the fallacious ruling of these faculties in the offices of thought that leads to erroneous doctrines, and to consequent erroneous practice ;—the subject is enormous, and fully to develope it would fill volumes.

403. It is apparent that the *associations of Memory*, and the *figures of Imagination*, are both best formed on the *relations of Reason* and Truth ; it is evident, therefore, that the right effective exercise of Memory and Imagination is through Nature and these Relations, and that the arbitrary use of both is to be avoided as habits, and therefore

Artificial Mnemonics is an idle, irrational, and mischievous Discipline, often filling *the capacity* with the dross of knowledge and particulars.

404. But so important is a just estimate and thorough knowledge of these Faculties to the Logician, that, without relinquishing their indivisible correlation and analogy throughout Understanding, we will separately investigate them in their predominant relations, individually; and, first, of *Memory*. From such investigation it will appear that a redundancy of either faculty is not, as commonly regarded, a strength but a weakness of the entire mind—not a perfection but an incumbrance, and not to be had but at a double neglect and sacrifice of its other faculties; whence the man of fiery imagination is of deficient reason, as he of asinine memory may want imagination; the one may be a madman, and the other a fool, while that the man of reason and judgment may be deficient of memory and imagination, is also a fact.

SECTION III.

405. MEMORY, which is the faculty of highest value in the vulgar estimate of Intellect, is, in a logical view, to be regarded as the lowest and least; nevertheless, it is a necessary associate and valuable servant of the higher faculties of Mind, although unfit for rule. It is the faculty first

developed, and to which precocity is chiefly indebted for its mimetic wonders and admiration, whence its aptness to overcharge the mind with puerile and useless lumber, to the impediment of the superior faculties, when not subordinated, and its stores reduced to order by selection and generalisation.

406. The grasping acquisitiveness of Memory, craving whatever is unknown, is an avaricious spirit, resembling the grasping avarice of money for its own sake; eager after everything unpossessed, regardless of its uses; an avarice that degrades the mind in the one case, as it debases the man in the other. In both cases riches are accumulated which draw after them the envy and homage of meanness and ignorance,—the one rendering the unlearned as eager pursuers of mnemonic acquisitions as the other does the mercenary after the monetic. Many a blockhead, many a mechanical mind, and many a child, have been indebted to this faculty alone for vulgar admiration, false reputation, and worldly advancement. The parallel might be continued, but it concerns the Logical inquirer only to guard against being overcome by the false forces, glittering riches, and volubility of Memory.

407. But Memory, as the valuable and necessary friend and servant of Imagination and Reason, is neither to be despised for its advantages, nor neglected, although it cannot pretend to Genius or Judgment. In due subordination, therefore, it merits regard, and is a valuable instrument of

thought—a mean like money;—and to the mind not rich or strong in this faculty there arises a necessity for a mental economy highly favourable to the growth, exercise, and developement of active intellect and judgment, conducive to genius and philosophy.

408. Yet there is no greater mistake in education than the over-exercise of this faculty, although the chief honours of scholastic discipline, and learned reputation, are often assigned to the mere acquirements of Memory :

For “ he that is but able to express
No sense at all in sev’ral languages,
Will pass for learned than he that’s known
To speak the strongest reason in his own.”—*Hudibras*.

Nor are those parents blameless who, for vain display of childish talent, burthen the young memory with any other than those necessary instruments of knowledge which are more likely in the end to realise the just ambition and aspirations of a parent. Inferior animals—even the stolid ass, is celebrated for the strength of his memory,* and it is remarkable in Idiots and the Insane.

409. There cannot, however, be a doubt that every faculty is strengthened and improved by judicious exercise, as much as it is injured by neglect ; nor is Memory, which is the most mechanical of the mental faculties, exempt from this law. Still it is the faculty Intellect can best afford

* Avicenna de Animal, p. 29.

to neglect, and from the deficiency of which the higher faculties may even derive advantage. Thus in age, when the memory grows weak and judgment has become strong, wise minds renew their judgments on questions instead of flying to memory for their prior decisions;—whence also aged judges are better qualified for judgment, and aged writers for revisions, by forgetfulness of their past decisions and compositions, and write and decide with more accuracy and solidity than the young and more memorative and imaginative minds.

410. Nor is it unworthy the attention of Logicians and cultivators of mind that a balanced subordination of the faculties is the perfection of Intellect, and that an undue qualification of either faculty is to be attained only with some sacrifice of the others; whence minds of strong *Judgment* are oft wanting in Memory or Fancy, minds of vivid *Imagination* are feeble in Judgment, and minds strong in *Memory*, though rich in matter, are poor in Mind. The faculties of the mind, like those of the body, vary also naturally in different men, and are more or less prone to action. In youth, accordingly, they are all to be duly cherished, exercised, and encouraged, but in subordination, neither overstimulated, over-fed, nor over-wrought.

411. Possessed abundantly of the matter of speech, and the particulars of knowledge, Memory is the most important faculty in Verbal Eloquence; whence men of strong memories, though defective

in judgment, are frequently fluent speakers and pour out their loose stores with an affluence that captivates the good-will and assent of weak minds ; while men, exercised in Thought, strong in Reason, and slow in Recollection, are often defective speakers, and unattended to, though rich and profound in knowledge.

412. In thinking, the contemplative mind is said, metaphorically, to ruminate. Perceptions and Conceptions are the food of thought, and, to extend the metaphor, Memory is the receptacle, or first stomach, for accumulating the aliment of mind. Intemperate, it refuses nothing to the extent of its capacity ; but it is the function of the assimilating faculties of Imagination and Judgment to prepare, digest, and secrete the vital and excrete the morbid and impure matter from the healthy or diseased mind,—as it is of Reason to temper Memory and Imagination.

413. The true system of nature and man is an universal allegory through analogy, to establish which truly is the office of Philosophy ; and a key to correct Art. It is by this universality of Analogy that the mind has been enabled either to allegorise or literalise at will every subject, to the clearing or confounding of Understanding, and the perpetuation of controversy on every subject ;—whence the necessity of a Universal Logic corresponding with Universal Philosophy for mutual support.

414. As *Memory* is the faculty of the mind first disclosed and perfected in youth, so it is the first to decay in age. To assist its powers of acquisition and retention—or, as it were, to take ideas into custody—many modes of *Artificial Memory* have been proposed for surcharging this faculty in youth, and invigorating its repletion in age, which have given rise to the questionable science of *Mnemonics*. To us there appear three natural modes in which Memory may be assisted; namely, by *Reiteration*, *Association*, and order or *Arrangement*. The first is most germane to Memory, the second draws on Imagination, and the third is most indebted to Reason; for neither of these faculties is independent of the others, but they are, as we have said, inseparable, and in every mode of artificial memory the operation is doubled, however strengthened, by two things being posited for the retention of one.

415. It was by moral and mental Mnemonics or *Reiteration*, repeating or calling to mind every night whatever of moment had been done or learnt during the day, that Pythagoras taught his disciples to confirm the acquirements of this Faculty; and this it does in the reduplicate ratio of repetitions, and especially so before sleep which obviates for its time, not only sense but recollection. A more artificial mode of Reiteration, more precise and permanent, and less burthensome to Memory, is that of written journalising of the most memorable

thoughts and occurrences, which, while it confirms Remembrance for all minds, fixes while it releases the individual memory, and duly exercises this important faculty. The most distinguished minds have resorted to both these methods with individual and social advantages.

416. By *Association*, Memory with Imagination connects either *known* Ideas or the *unknown*, or the *known* with the *unknown* ; by which latter some new idea is attached to some figure of Imagination already conceived for confirming Memory, and this in the most arbitrary ways without end ; as, when we would remember the name or thing new or unknown, we couple it with a known name or thing similar in sound, or signification, or figure, &c. : and this mode and that of Association with numbers and symbols have afforded bases for several plans of artificial memory, or Mnemonics. The whole principle by which these associations are effected is that Universal Analogy, by which the world is filled with similitudes, and linked in unity in an infinite variety of ways ; they are otherwise arbitrary and partial methods only, not at all philosophical, nor logical.

417. *Association* of Ideas is also a natural process by which Imagination forms pictures or groups of ideas, and assists Memory by trains and combinations of words and thoughts through analogy ; to which belongs also the negative power of *Dissociation*, or separation and distinction of ideas.

Association and Dissociation are, therefore, equal processes of the logical mind,—the Synthesis and Analysis of active Imagination, which necessarily precede or accompany Memory.

418. This Association of Ideas consists in the bringing of ideas into some sort of relation or succession, and the more natural, analogous, and true, such trains and relations are, the casier, firmer, and more valuable will be their association; but should they be arbitrary trains or false relations, they will require Reiteration, and their permanence will be proportioned to the frequency of repetitions, which Memory never refuses. To this mode of Mnemonics belong the *Triads of Bardism*.

419. Such briefly is the philosophy of the Association of Ideas, or relations formed arbitrarily and without rule by Imagination in aid of Memory; or better framed according to the invariable natural regulation of Reason, which is itself the faculty of the recognition of real relations founded in Universal Analogy.

420. The philosophy of the Association of Ideas was an original ingenious doctrine of Hobbes and Locke, which from its novelty excited and charmed the curiosity of inquiring minds, and was eagerly adopted by writers as a chief principle of the Science of Mind and of human action, whence have sprung various moral and noological systems.

421. The mnemonic habit of reproducing by association and reiteration may be regarded as ex-

tending alike to the bodily, sensible, and intellectual faculties, and assisting the disciplines of Art and Science. Thus the fingers strike keys and chords, &c., simultaneously and successively at the instance of the will in reproducing the most difficult passages and performances of music, painting, and the pen; thus establishing by reiteration, manual and mental dexterity, the modulations of sense, and the rapid calculations and combinations of intellect; and thus every faculty belongs to, and participates the entire man with unlimited potentiality: even the involuntary motions of the animal structure, if not the whole organism of vitality, seem subject to the same law, and all physiology may be reduced to the regulation of the most physical of the noological faculties analogically.

422. The order in which Memory stores its acquisitions gives rise to associations which afford the clues by which it finds them when required. To secure right associations and trains of thought is of high importance to man, for to such he is indebted for principles of action, good and evil disposition, peculiarity of character, prejudices, party-spirit, love and hatred, bigotry and intolerance, superstitious hopes and fears. To this power of the mind we owe the casual rise and flow of successive thought, the recollection of a song, a circumstance, a tale, or a tune, from the recital of a few words or notes, and it greatly assists meditation or voluntary thought.

423. But mental associations being quite as accidental and arbitrary as the combinations of Matter; although not without relations or analogy, proceed on such as are too remote and incongruous to afford true scientific and universal principles. The doctrine of Association has, nevertheless, operated favourably, while attaching the mind in its inquiries to partial and arbitrary analogies, by preparing it for such as are natural, connected, and Universal.

424. The remaining auxiliar of Memory is order or *Arrangement*; as when articles are assorted in the mind, and deposited for recollection in a preconceived cabinet distributed into compartments, lettered, numbered, or figured, in alphabetical, numerical, or geometrical order, in modes of imagination and art, which have also contributed plans of *Topical Mnemonics*, much celebrated by the ancients. Or, finally, and best of all, by *Rational Arrangement* according to the distribution of Truth and Nature, whereby the particulars of knowledge and Memory are classed and generalized so as to enlarge the sphere and capacity of the mind to the extreme of all knowledge, and retain its acquisitions in order when called for. And this is the true, natural, and scientific, as well as most effectual aid of Memory, according to the genuine forms of Logic, and true Universal Analogy. But the greatest and most salutary means for strengthening and extending the memory, as of all the

faculties of the mind and man, are those of practice, reiteration, and wholesome exercise in due subordination ; for to be well-regulated rather than over-stored is the proper elevation of Intellect,—a well-ordered mind.

425. In every mode of artificial memory there is a surcharge of the mind ; for the whole human mind, and especially Memory, is very properly termed a *Capacity*, and notwithstanding it varies in degree in its subjects, it differs probably more in the quality than in the quantity of its contents, and has hardly attained its full growth ere it has become full to the brim. Admitting it, therefore, to be a limited capacity, and knowledge or ideas to be the matter with which it is filled, the flowing in successively of new matter does but displace the old, with very little enlargement probably of the capacity itself. If, then, this intellectual casket has a limited capacity, it behoves its possessor to avoid repletion,—to store it with that which is most valuable, and in exchanging its riches to give not bulk for *bulk*, but bulk for *value*.

426. *Particulars* are the copper coin, the base metal, though useful currency of Memory, and he who would store his Capacity with intellectual riches will exchange his Particulars for *Generals*, which are its sterling gold ; and this is the office of true Imagination. By these means he will open and enlarge his mind to new acquisitions and exchanges of higher value, and will ultimately possess

himself of those *Universals* which are the richest jewels of the mind ; but for these he must apply to Reason, the highest faculty of Understanding, and guide of Imagination.

427. EXPECTATION of the future, is the antagonist to *Memory* of the past ; and as Memory elicits Expectation, so Expectation renews Memory ; and from these elements springs actively a present sense of past and future in IMAGINATION, shewing the connexion and co-essentiality of the faculties of the mind, and their bearing in Memory and Expectation on the senses and passions. Thus the "*Pleasures of Imagination*" are suggestive of the "*Pleasures of Memory*," as the latter are of the "*Pleasures of Hope*," which have successively inspired three poets with themes for three poems of extreme popularity and effect. A loftier and a greater theme, if poetic judgment fail us not, still remains untouched by the poet,—*The Pleasures of Reason*, the scope of which transcends sense and rises to happiness.

SECTION IV.

428. AGAIN : IMAGINATION is the medial faculty of Understanding, whereby the others energize ; and it operates most effectively when Memory supplies the matter of Imagination from nature and facts, and Reason regulates its figures, forms, and combinations, according to analogy and truth. A

vigorous Imagination, thus supplied and controlled, becomes an organ of works emulous of perfection, and eternal as nature,—the stimulant of immortal genius,—but, unsupplied by Memory and uncontrolled by Reason, the true office of Imagination in forming images, ideas, or conceptions according to nature and analogy is corrupted, and exaggeration, empty tumult, and extravagance, hurry genius onward to insanity.

429. But science has been anticipated here by a genius of another order, who himself exemplifies and illustrates our position, in “thoughts that breathe, and words that burn,”—words that need no praise, and figures which come so home to common consciousness that endless repetition cannot injure them ; which also supply an accurate and exquisite description of this faculty, at once poetically beautiful and philosophically true :—

“ Lovers and Madmen have such seething brains,
Such *shaping Phantasies* that *apprehend*
More than cool *Reason* ever *comprehends*.
The *Lunatic*, the *Lover*, and the *Poet*,
Are of IMAGINATION all compact.
One sees more devils than vast Hell can hold ;
That is the *Madman*. The *Lover*, all as frantic,
Sees Helen's beauty in a brow of Egypt.
The *Poet's eye* in a fine phrenzy rolling,
Doth glance from heav'n to earth, from earth to heav'n,
And as *Imagination bodies forth*
The form of things unknown, the *Poet's pen*
Turns them to shapes, and gives to airy nothing
A local habitation and a name.”—*Mid. Night's Dream*.

430. The genius of Shakspeare was universal, and the analogical philosopher cannot fail to remark how succinctly and completely he here universally analyzes and exhausts his subject. The phrenzy of the lunatic is *physical*, that of the lover is *sensible*, but that of the poet is an *intellectual* phrenzy; and besides these there is no other but their compounds. Shakspeare here calls Imagination "the poet's eye," in *Hamlet* he as consistently calls it "the mind's eye."

431. We learn hence that Imagination, however essential to thought, is a phrenetic faculty dangerous to the sanity of Understanding, when uncontrolled or unguided by the logical faculty of Reason supplying genuine analogies; and even when accompanying and taking the lead in the inquiries of Reason, Imagination is prone to conduct into errors, often irretrievable. And it has been the giving license and supremacy to Imagination to conduct Reason enthusiastically that has led learning so often into mysticism and error in religion and philosophy.

432. It was this that overlaid the learning of Baron Swedenborg, and converted his Reason, Scripture, and Philosophy into a *Fantasticism* replete with beautiful poetic truths, which have converted some otherwise rational men to *Mystics*, and others to *Fanatics*; and through imaginative doctrine which, though meriting cautious study even for its Philosophy, requires the unyielding strength and sanity of Reason to analyze.

433. The darkness of Mystery is at utter variance with the light and truth of Reason and Science; so that any use or affectation thereof justly subjects the learned man to suspicion and his professions to distrust. Inasmuch even as truth is not clear it is of little more value in science than ignorance is, nor is it even so favourable as ignorance without prejudice is, in search of knowledge.

434. When we will admit undefinable and unconscious premises and assertions, any madman may argue us into convictions of utter absurdity. Reason, therefore, rejects whatever is Mystical or Fantastic, and it is only through indolence, supineness, or passive will that the mind gives uncontrolled license to Imagination, or suffers it to usurp Logical authority. The highest office of Imagination consists in storing Memory with real, analogous, and poetical images of nature and art, and of refining and freely combining them in the productions of wit and genius.

435. The inventive power of Imagination in forming ideas and images, whether poetical or philosophical, is entirely due to the analogy of all natures, whereby every thing correctly thought is related to all others.

There is, instinct in mind, a feeling of this analogy which prompts us to transfer the relations of one thing to some other, and when such are remote or unusual, and connected felicitously and fitly, it is by an effort we call Genius, *i. e.* Nature working

for herself independently of Art and Teaching, or in happy conjunction therewith; hence Imagination is a faculty of constructing analogically, and of conceiving analogies and relations.

436. In art and literature Imagination is as useful in condensing and abridging as in augmenting ideas, enabling us to put a part for the whole :—

“ For much imaginary work was there,—
That for Achilles' image stood his spear
Grasp'd in an armèd hand ; himself behind
Was left unseen, save to the eye of mind.”

SHAKSPEARE—*Tarquin and Lucretia*.

437. Analogy is the source and substance of *Wit*, which is condensed scense or signification, whether it be the wit of wisdom in the *Apophthegm* of the philosopher, or the degenerate wit and *Pun* of the humourist which evokes a double meaning; for the first discloses some deep or valuable correlation, and the latter supplies a double meaning or relation, which when true excites admiration and warms reason, and when false or absurd, provokes mirth and laughter, and between these lie all degrees of wit, which, belonging to Imagination, is rhetorical, and not logical. So much more, indeed, does Wit depend on *words* than on *thought*, that it can only be imperfectly translated from one language to another.

438. Hence, also, the antagonism of Reason and Admiration, with Mirth and Laughter; for though

Laughter is opposed to Reason, yet to none but the rational animal Man is the faculty of laughter given,—the consciousness of absurdity being as essential to the conviction of *truth*, as shade is to light,—the physical analogue of truth and reason.

439. Hence, also, the scope and object of Reason and Laughter are triply coincident; for Laughter is physical through *titillation* of the nerves and muscles, it is sensible through *sympathy* from seeing others laugh, or it is intellectual and logical from *conviction* of absurdity. To subdistribute, or to dilate on which, belongs to an especial treatise.

440. Imagination, which draws its materials chiefly from the world of sense, plays back upon sense and gives relish to all the appetites; drawing also on all the faculties of mind it re-acts by prejudices upon the judgment and understanding, and is thence an object of especial caution to the logician.

441. The power of *Imagination* in pursuing the succession and subordination, or series of nature and particulars, and of storing memory, appears to have no bound. We cannot conceive anything so small or few but Imagination can represent that which is smaller and fewer without end, nor anything so numerous, large, or distant in time or space, but that there is something conceivable beyond it; and, what is yet more wonderful, the more minutely or extensively we investigate the

Universe by the senses, the more they justify this process of Imagination, which is at once the telescope and microscope of the mind.

442. Astronomy exhibits the planets in systems, these in system with the sun ; the mind is carried on to believe this but part of a wider system, and so on ; and observation has justified the supposition. Taking an opposite course, Fancy has represented the earth as a hollow ball containing a central fire,—the light, if you will, of an interior system, the continent of other systems ; darting hence with the rapidity of thought to the sublimest extreme, in an instant we imagine, with magic ease, that the infinite celestial expanse with all its systems,—the hosts of the Heaven that contains us, is but the interior of another world, yet infinitely too small to hold or circumscribe the imagination of little Man's infinite, exhaustless, interminable capacity !

443. What then ! Is there no resting-place for the busy human mind ? Yes. Turn its contemplation from the *Objective* to the *Subjective*,—from Particulars to Universals,—from Sensibles to Intelligibles, and the mind will rest satisfied that that which objectively is immeasurable and innumerable, is subjectively bounded and one ; that Mind is all-comprehensive, Sense short-sighted and confined ; that Sense particularizes with Imagination, turns her course outward, subjects everything to the license of fancy and boundless hypothesis, and that

Intellect with Reason points the mind inward, subjects it to the function of generalizing, and thereby restrains Imagination to the proper office of assisting the Judging faculty in generalizing the materials with which Memory is stored, and placing knowledge on its categorical basis, the original form of all intelligence, the one sole ground of all truth, understanding, and comprehension.

444. But Imagination has not only the *synthetic* office of fancifully and infinitely positing and composing, augmenting and diminishing; it has also the *analytic* power of negating, separating, and distributing, which is called ABSTRACTION, which if it be a distinct faculty of the mind, as some have supposed, is a faculty between Imagination and Reason, in which both are engaged: for, in truth, the mind has no absolutely independent faculty. We learn hence that abstract ideas represented by general terms are relations of Imagination, and not real things, and that to the Imagination or conceiving faculty belong the operations both of Analysis and Synthesis.

445. The elements of Mind are analogous to those of Matter, active and passive. *Reason*, as the *solid* Earth, is passive; *Memory*, as the ocean of knowledge, flowing and *liquid*; and *Imagination*, as the *elastic* air and fire of intellect, expanding and contracting, is active; and Man must employ each set of elements with similar caution if he would avail himself of their powers with advantage. Ima-

gination, like wind and fire, when uncontrolled, is destructive of truth and good ; but, duly regulated, is salutary, efficacious, and true. Memory, like water, abounding, overwhelms and suffocates intellect, which in its due employment it irrigates and fertilizes ; and Reason, which Imagination calls dry, like the earth, is the solid basis of understanding and truth. The metaphor might be easily extended ; and the universe, truly understood, is a system of metaphoric analogy to the poet, and of rational relation to the logician.

446. To conclude ; it is not sufficient that the ideas of Imagination *may be true* ; to become science, or logical, they *must be true*. It is such insufficiency, and the admission of facts and figures unsupported, that have justly subjected phrenology, mesmerism, and numberless doctrines at different times, to discredit. Nevertheless, if such are *false*, it is neither necessary nor expedient to oppose them, since they are already dead to Reason ; and if they are *true*, they will live in spite of all adverse authorities. Therefore Reason will not even make merry with false doctrines, because that would give some consequence to follies, but it will allow them to die a natural death.

So much for Imagination.

SECTION V.

447. FINALLY, REASON, the third, principal, and presiding faculty of the Understanding, whereby it cognizes relations universally, is especially logical, connecting general relations within the universal, and particular relations within such as are general, philosophically uniting the finite with the infinite, and all things in one harmonious system of eternal truth and intellect. Reason is, therefore, the faculty of recognition,—the identity of mind, individual and universal.

448. We regard the term *Reason* [ratio] and *Relation* as, if not of one etymon, at least of the same import in logic; here signifying the faculty by which the mind becomes cognizant of truth, or the relations of thoughts and things, which, being universal, are first principles. And as the office of Imagination is to compose images, conceptions, or *ideas*, so it is that of Reason, assisted by Imagination, to disclose *notions* by abstraction and comparison, which are more properly truths and knowledge.

449. *Truth* is thus the satisfaction, fulfilment, or harmony of Reason, and unity of Relation; and Reason is not merely a uniting and cognizing, but also a systematizing and universalizing faculty,—presiding in Understanding, participating its other

faculties, and logically determining according to its three acts or assents,—of Perception *received* by Memory, Apprehension *conceived* by Imagination, and Judgment *convinced* by Reason, all of which are coessential to logical ratiocination and conclusion: but as Reason is circumscribed by the truth of Relations, we need circumspection in its use, that we may not transcend its authority amid false relations and on imaginary ground.

450. *Reason* is thus the highest faculty of the Understanding, and nearest to pure *Consciousness*; but although it is therefore justly regarded by logicians as superior to its other faculties, it does not follow that it is to be placed above its comprehending faculty, the Understanding, as we have already shewn.

451. In every act of the Understanding all its faculties are engaged in triune indivisibility, rendering their separate investigation difficult, and their analysis only partly possible according to relation, even in the most familiar offices of Understanding. Take, for example, any object of the external sense: of sight, a building or other figure, in which perception will present to Memory a picture never extending to more than half the surface, and to none of the solid contents of such opaque object; but these are supplied by conception of Imagination, and the whole idea or object completed by a judgment or recognition of Reason. Or, inversely regarded, the whole complex of an

object is supplied by a judgment of Reason formed from previous perceptions of Memory conceived by Imagination: as of a stack of corn from a few protruding ears, wherein the whole Understanding is active beyond sensation in its simplest perceptions.

452. It is the same in the analysis of the judgments of Reason as in the conceptions of Imagination and the perceptions or receptions of Memory and Sense, the distinctions of which are but the analogical Relations of individual Understanding and Consciousness, under various subordination in individual minds, influenced by the various predominances of character and circumstances. And in such way all the powers of the Understanding are variously engaged according to unerring relations, in whatever way the mind may operate; nor is this an entirely novel position.

"The Memory, the Will, and the Intelligence, are all distinct, yet one. Though each be separate, they are perfectly united. I perceive that I perceive, will, and remember; I will to remember, perceive, and will; and I remember that I have willed, perceived, and recollected."*

453. Thus the whole mind is variously connected by action and passion, or reaction in each and all of its faculties; in which sense action and passion are figurative according to external power, but may be regarded internally as impression and expression:

* Albin Opera, p. 773. Shar. Turner, "Hist. Angl. Sax." vol. iii. p. 450.

terms with regard to mind also figurative, or borrowed from externals. Thus all the Passivities of the Mind, whether of Memory, Imagination, Reason, or Will, are impressions thereof, and all its Activities are expressions thereof; and the term Discourse applies equally to the expression of words or of thoughts, whence the Greeks used the same name [*λόγος*] to denote both *Word* and *Reason*, or "*Rational Speech*;" and Hobbes has remarked that the Latins called accounts of money *Rationes*; accounting, *Ratiocinatio*; and items of account they called *Nomina*, or names.

454. The office of active Reason is pre-eminently called Thinking, and is variously denoted by the terms Reasoning, Reflecting, Reckoning, Abstracting, Deliberating, Distinguishing, Weighing, Communing, Comparing, Judging, &c. And Reason, Ratio, Relation, Analogy, Comparison, Judgment, and Inference, as acts of the Understanding, are synonymous; whence to compare, and judge between things compared, to shew the analogy and relation of one thing with another, and to exhibit the rate, ratio, and Reason of things compared, are precisely of the same signification.

455. All arguments abound in Comparison; in the syllogism there is a double comparison at least, and there is no reason without comparison, reason being the faculty of comparing and concluding. Now there is no other comparing than through correlation or Analogy; the universality of Ana-

logy must, therefore, be admitted, with its logical importance, throughout intellect and discourse. It is by the strength of Analogy also that in the office of judgment we decide between opposite arguments.

456. *Reason* being both Active and reactive or Passive, as are all the faculties of Intellect, operates either from its internal forms or Conceptions to its external Perceptions *Analytically*, or from the latter to the former *Synthetically* ; for the external and internal are *Antithetical*, analogous, correlative, and concurring powers, on which depends the logical faculty of Reason, which distinguishes thoughts through Truth and Falsehood as the eye distinguishes things by Light and Shade.

457. Yet the mind may consider abstractly these concurring powers, and regard either the internal or the external as distinguished, and build thereon distinct sciences, the first of which are called Abstract, the latter Experimental, or of experience ; the first regarding subjects and the relations of thoughts, the latter respecting objects and the relations of things.

458. To recapitulate ; *Consciousness*, the ground of all Relation and Existence, we have placed at the foundation of all cognition, or Volition and Understanding, each of which is Active and Passive, or Concurrent modes of *Understanding*, of which Memory, Imagination, and Reason are varieties, as Appetites, Passions, and Motives or determinatives, are of Volition or Will. *Reason* we have found to

be the Consciousness of Relation in Judgments, *Imagination* the same in Conceptions, and *Memory* also in Perceptions, &c.

459. Mind is a principle of Unity, and its faculties are an inseparable series of united and uniting powers throughout Consciousness. In an indefinite series there may be relative distinctions, but no absolute divisions or separations, and to unite and distinguish, or distribute according to Relation, include all the offices of mind.

460. Similar analogy holds in respect to literature and art; for *Memory* is an *Historic* faculty, of which variety and succession are the matter and mechanism; but *Imagination* is a *Poetic* faculty, of which unity in variety, a figured whole, are the elements; and *Reason* is a *Logical and Philosophical* faculty, of which simultaneous unity, integrity, truth, are the essence. So that *Imagination* is a medial faculty connecting the variety of *Memory* according to the unity of *Reason*, and their works and ends are accomplished through these attributes.

461. If, therefore, there be any obscurity in these distributions and descriptions, it is the same throughout cognition; for knowledge, which consists variously of the hidden and the brought-to-light, is the chiaro-scuro of mental objects, in perfect analogy with the chiaro-scuro of sense,—the light and shade, the agent and patient, upon which depend all the effects, forms, and objects of

the sense of vision ; and the perceptive and cognoscitive powers of mind and sight belong to an analogous, inseparable correlation, whence Truth and Light are mutual metaphors ; and all knowledges distribute and disturb the pure unity of truth and intellect according to relation or analogy, as all colours are disturbances and distributions of the pure unity of the principle of light according to analogous relations also. The whole universe is a like infinite variety in unity according to one Universal Analogy, of difficult interpretation only through defect of Language.

462. The chief office of *Reason* as distinguished from the subordinate faculties of Understanding is, then, *Judgment of Comparison or Relation*, wherein its logical power consists, and whereby it logically determines the relations of thoughts and things according to Universal Consciousness and Analogy, to which it appeals in all its inferences and convictions, and, therefore, conclusively. The first determination of every logical process is, accordingly, a *Conclusion of Reason* ; and hence, again, logical arguments are called *Ratiocinations*, and their adducements take the name of their faculty, and are called *Reasons*.

463. The *having Reason* or the *want of it* are sufficient grounds for the *asserting* or *denying* anything, but if neither the one nor the other can be made apparent, it will become the proper ground for *Suspense of Judgment*, as concerning facts of

which we have neither knowledge nor true testimony. He who argues with *Reason*, argues with *Truth*, i. e. *the light and strength of God*, and, therefore, *irresistibly*. Yet against those who in their judgments use their wills or prejudice instead of Reason, there is no argument of conviction.

464. It is this highest faculty of reflective Reason that principally distinguishes man from brute animals, which, in common with himself, have *sensible Ideas* of *facts*, but not *intellectual Notions* of *truths*; which have sight, perception, and instinctive reason, but cannot abstract and compare with consciousness.

It is this faculty also that enables man to construct languages or general signs, the chief instrument of thought, to invent arts, to disclose sciences, and to attain to the moral and religious source of Intellect HIMSELF. But the brute and dogmatic mind cannot distinguish between *Truth* and *Fact*, between facts which are *particular and absolute*, and truths which are *general, relative, and Analogical*.

465. It has been often argued and asserted that beasts and other *animals have Instinct to guide their actions, but that Reason is the attribute of man only*.

But may we not assert and argue, what is equally well ascertained on the opposite analogical extreme, *that the acts and Reasons of man are Instincts*, since, under like circumstances, in all

times and places, the arts, institutions, laws, opinions, and judgments of men are uniform; shewing the difference of Instinct and Reason to be degrees of the same *Omniscient Reason* who directs the whole, which is all we can understand truly by *Instinct and Inspiration*? Nor does this inference degrade man, but elevates all creation, and sympathises all living creatures; but if we assume *two* principles in nature where *one* is sufficient, we detract from the divine wisdom, simplicity, and power; and if the identification of Reason with Instinct be a sacrifice of human pride, it is, nevertheless, a concession due to humanity and truth.

466. Nor, if our argument be correct, are human *Inventions* and works of *Genius* any other than the calls of invariable Intellect and eternal Reason, under requiring and inspiring circumstances, at various times, in various countries, and often variously or alike by different minds at the same time and place, so as to produce controversies, emulations, and competitions, by which they have been carried forward and accomplished as designings of the universal inspiring Providence who administers in all things; which the ancients figured poetically as Destiny and Fate, and modern minds have transfigured into Predestiny. To argue the reverse of this is to invest man with the attribute of a creator.

467. That *Reason* is a universal and divine faculty is apparent throughout nature and creation by the evident fitness and sufficiency, individually

and relatively, that accompanies every part and every complex of the work of God ; and it is sub-ordinately the same in his chief performance, man. He is, therefore, grossly ignorant, or wilfully blasphemous, who reproachfully condemns or opposes this highest faculty of the divine spirit of God in man,—the sole foundation and support of all faith and truth.

“ He that made us with such large *discourse*,
Looking before and after, gave us not
That capability and *God-like Reason*
To rust in us unused.”—SHAKESPEARE.

So much for the *Faculties* on which Logic is founded, distinguished in a different view from their *Energies* as acts or effects of their concurrence ; of which next.

SECTION VI.

468. THE effects or LOGICAL ENERGIES of the subject correspond, we have seen, with their faculties ; namely, *Perception*, with Memory,—*Conception*, with Imagination,—and with Reason, *Judgment* ; not purely, indeed, but proximately, agreeably to the universal plan of philosophy, and the method of nature. We distinguish that Energy only by the term *Perception*, in which Memory predominates ; that by the term *Conception*, in which Imagination is principal ; and that in which

Reason has the ascendancy, we distinguish by the term Judgment, or perception of relation or analogy, and as such it is regarded by logicians, who have defined *Judgment* the perception of the concurrence or coincidence of two ideas, or the want thereof.

469. *Perception* differs according to Sense and Matter, *Conception* according to Thought and Form, and *Judgment* according to Relation and Effect ; and they are all modes of intellection, and all unifying processes, — particular, general, or universal, in which the particular is principal in Perception, the general in Conception, and the universal in Judgment. Thus Thought, universally, is a logical act, particular, general, or universal, and Logic is the science of thought exercising these forms or relations of unity, as *Individua*, Species or *Genera*, and *Universum*.

470. The result or produce of every act or Energy of thought is hence a unity, by whichever of its Faculties it may be effected. Thus, Perception of Memory unites particulars in succession ; Conception of Imagination unites and generalises them unconfined ; and Judgment of Reason unites them according to the established laws of universal order and relation, categorically. The whole of mind is inseparable unity, and the whole of its various faculties are unities in subordination, as we have shewn. Each of its Energies also mutually penetrates the others, whence there is not only a

Judgment of Reason which is *logical*, but there are also a Judgment of Imagination and Conception, called *Taste*, and a Judgment of Sense and Perception, which belongs to Memory, and is called *Experience*.

471. In every Energy or act of thought there is a Cognition of Analogy, or Consciousness of Relation. Thus, in Perception we *distinguish*, in Conception *acknowledge*, and in Judgment *compare*, *similar and dissimilar*, according to Analogy; so that Distinguishing, Acknowledging, and Comparing are only degrees or varieties of the act of thought.

472. Thus, in every distinction there is an act of *Judgment* that affirms or denies one thing of another, and therefore is this Energy of the mind inseparable from every Sensation and Thought, and the variety of the Faculties and Energies of the mind are distinctions of Relation or Analogy only, and not absolute differences, as commonly regarded: for Mind, we repeat, is a principle of unity and identity, of which Logic is the science, and its Energies and Faculties are coincident therewith.

473. As the logical *Faculties* and *Energies* are correlative and inseparable they are degrees of the same subject; and Perception, Conception, and Judgment being inseparable, we properly define Judgment the Perception of Relation, as we also call Reason, Relation altogether; and it finally follows that the logical Organs or *Operations* of

mind are, according to the like essential Analogy, degrees of the same intellection, and inseparable, and that Logic altogether is the science of Reason or Relation of the same subject, and the Mind every way a Unity.

474. Thus there is a commerce of the Faculties, Energies, and Operations of the mind, from which new *Compound Distinctions* arise, through which Volition enters into all the Active offices of the mind, and Consciousness into all its Passive offices; and they conjoin in Understanding in all its Effects.

475. Hence Volition acting with Memory becomes ATTENTION, a new logical distinction which may be defined Continuous Will, which, like constant bodily action, soon tires; but Volition wanting passive power cannot will oblivion, whence the Willing to forget a thing is to confirm its remembrance, for Attention begets retention. It is thus also that the Will converts Consciousness into Moral Conscience, which would willingly forget but cannot.

476. *Attention*, falsely treated as an original faculty, is farther compounded with the passive powers of Understanding and the active Will, intermediate and connective, of both. In *Reception* it is Passive Volition, and in *Reflection* it is Active Understanding; more common in its Passive office of Reception through the senses, and from the works of others, than Active in operating with its intellectual faculties on the Truth of Things, the

original and sole satisfactory source of knowledge ; the former being useful guides only to the original objects of study and Attention, the discipline of which, as a habit, is of the utmost logical importance when kept free for all faculties under the superior guidance of Reason and Understanding.

477. 'This commerce of the Faculties is not confined to the mind alone, but connects those of both mind and body in natural analogy, and has influence even on language. Thus the *Conceptions* of the mind are the begettings of sense, like those of the body, and the term applies to both through analogy, and to Imagination, which is the faculty of mental conceptions, to which has ever been attributed the power of influencing the conceptions of the body, while *parental likeness* stamps the offspring of both, and identifies physical with logical Analogy.

The great Harvey has made admirable use of this analogue in accounting for parental likeness in physics, and has applied it in elegant illustration of Art.*

478. The same reciprocation that pervades the principles and relations of the objective, prevails also in the subjective and logical systems : hence Perception, which is principal in Memory, is predominant in all the faculties ; Conception, which is principal in Imagination, is predominant in all the

* See Dr. Willis's " Harvey," pp. 155, 578, &c.

Energies ; and Judgment, which belongs to Reason, is predominant in all the operations or modes of argument which are principal in Logic and Dialectics ; to which we proceed.

SECTION VII.

479. LASTLY, in the LOGICAL OPERATIONS or *Organism* of the mind, or the instruments, modes, or forms of argument, Reason, the highest faculty, and Judgment, the highest energy, are principal ; and Reason, the most active faculty by its energy, Judgment, combines and arranges the conceptions formed by Imagination from the particular perceptions received by Memory, according to universal Subjective forms, which concur with universal Objective nature in the production of knowledge.

480. Now, universal Objective nature, we have seen, is, according to its relations, *External*, *Medial*, and *Internal*, as the matter or objects of knowledge ; and these correspond with the *Particular*, *General*, and *Universal*, as forms or relations of knowledge, which, being predicated of things, denote them *Individuals*, *Species*, or *Genera*, the first logical distinctions of things, and the ground of all ratiocination, the science of which is *Dialectics* ; which involves also *forms* and *matter*, to the first of which belong the *logical organs or modes of argument*, and to the latter the *topics or subjects of*

inquiry, which extend to all the distinctions of knowledge and science.

481. Ammonius remarked* that among the ancient philosophers, the Stoics treated Logic as a part of philosophy, the Peripatetics as an *organ* only; but Plato made it both an organ and a part of philosophy. Aristotle called it an organ, as a key to all science,—an instrument of all philosophy.† Bacon regarded it also as an organ; but the organs and operations of Logic are as various as the faculties and energies of the mind to which they are conformable, and it belongs to *Dialectics* to unfold them, and to display their uses as instruments.

* On the Catog. p. 8.

† Gale, ii. pp. 303, 377.

CHAPTER III.

DIALECTICS.

SECTION I.

482. As knowledge, or science, is the result of a correspondence and conformity of relations between the subject and the object, and as, throughout objective science, or Philosophy, there is a uniformity of relations, so must there also be throughout subjective science, or Noology, and the science of ratiocination, Logic, or DIALECTICS in particular, a corresponding uniformity of relations by which ratiocination or logism is rendered possible.

483. Accordingly, in the acts or operations of Reason and Logic there are *three organa*, or instrumental processes ; the first of which is a mode or form of argument or ratiocination through *particulars*, which is called inductive, and might also be called historical ; and its produce is some general truth. This operation may be called generalological, or a GENERALOGISM, because it generalises, rising from individua to

genera, &c. This is the *Epagoge* [ἐπαγωγή] of the Greeks, or *Induction* of Aristotle and Bacon.

484. This mode, or organ, applies principally to that department of science which belongs to the external most particularly, namely, Physics, and depends principally upon that faculty and energy of mind which corresponds also to the external, physiological, and objective, namely, memory and perception; and it is chiefly synthetical, ascending from particulars to the general, and through generals to the universal, whence its universality as an organ or instrument, applicable to the *Logic of Particulars* and Individua.

485. Secondly, there is a mode or form of argument, or ratiocination by generals or media, which is called syllogistical, and its organ and operation a SYLLOGISM. This mode is adapted principally to that department of science which corresponds to the medial and representative, namely to the philological and discursive, with which it is usually associated; and this mode depends upon conceptions which belong to the faculty of imagination, which corresponds also to the medial. It is antithetical, connecting the universal and particular by a general or mean; whence, its universality as a mode of argument,—instrument, or organ applicable as the *Logic of Generals* or media.

486. And, thirdly, there is another organ, mode, or form of argument or logism, dependent

upon universal relations, which mode may be called analogical, and its operation an *ANALOGISM* ; and this mode is principally applicable to those departments of science which relate to the internal and subjective, namely, to the logical and ethical ; and it depends upon the judgments of the highest faculty of the mind, Reason ; and it is chiefly analytical, descending from the universal through the general to the particular, whence, also, its universality as an organ of universal Logic, or the *Logic of Universals*.

487. Without such a logical mode, there could be no adequate premises for philosophy, the universe, or God ; in a word, there is no other way in which can be demonstrated those universals or categories upon which the validity of all logical conclusion must ultimately depend ; and the profoundest metaphysical researches without this process can produce only paradox, subtle and ingenious visions, or imperfect and sterile philosophy, devoid of genuine science.

488. Of these three modes or organs the chief distinctions as operations are, that *Syllogism* operates by illation or inference from inclusive premises ; *Generalogism* by induction or deduction of included premises ; and *Analogism* by equation of correlative or coinclusive premises. *Ideas*, *Propositions*, and *Syllogisms* or ratiocinations, have been called the three Operations of Logic ; but if one mode of ratiocination is an Operation, so must

the two others be also ; and as such we have, therefore, distinguished the *Analogism*, and *Generalogism*, or Induction.

489. These three modes or forms of argument, logism, or ratiocination—the *generalogical*, or inductive ; the *sylogistical*, or scholastic ; and the *analogical*, or universal, comprehend all dialectical operations, consonant in plan and relation to the faculties and energies before enumerated upon which they depend.

490. But although there are thus various modes of ratiocination, there is but *one Reason* ; and hence, that which is proved in one of these modes may often be argued and proved in the other : there being, however, no perfect conclusion in any case without a universal subsumption by the premises. It does not follow, therefore, that each of the modes is on every occasion equally proper or equally prompt in conducting to true conclusions ; and herein lies the use of Logic in directing us how and on what occasions to apply the several modes of argument and inquiry ; while, by instructing us in the various forms and powers of ratiocination, it enables us also to analyze and test the arguments of others.

491. It is to be noted, also, that these distinctions of modes are by no means absolute, neither of them being independent of the others : hence, they reciprocate and compound ; and it is to this reciprocation (to express which language is

inadequate, owing to the want of true analogy in the significations of words), that we are to attribute the difficulty of conveying, and, in some measure, of conceiving, this systematic ubiquity, in which no part is absolute, but all is relative. It is sufficient, however, for the present, if the foregoing has evinced the conformity of Logic with Science in general.

492. The three organs or modes of argument being convertible reciprocally, every subject may be investigated and treated analogically, syllogistically, or generalogically ; accordingly, the induction or generalogism may be exhibited as a chain of minor syllogisms, and *vice versâ*, as the analogism may be also ; and both syllogism and generalogism may be shewn to be analogically constructed.

493. It does not follow hence that the use of these organs is indifferent for all subjects ; for there is a natural affinity by which the Induction or Generalogism is best qualified for physical operation, the Syllogism for mathematical calculation, and the accurate, sensible sciences, and the Analogism for moral and metaphysical investigation ; while a diversified use of the three, according to experience, taste, and judgment, is suited to a mixed inquiry.

494. They err injuriously to science who refer all logical determination to either organ singly, as the disciples of Aristotle do who acknowledge the Syllogism only, and the followers of Bacon, Locke,

and Newton, who will hear of no other logic than Induction, whence late writers on Natural Theology and Cosmology have physieized these inquiries with great disadvantage to genuine Ethics; and hence some have repudiated Logic altogether, and trusted inquiry solely to the natural sagacity, common sense, prejudice or passion from which spring all the errors that enslave and corrupt the heart and mind of man.

SECTION II.

495. PROPOSITIONS are the matter of each *Organ*, and of all ratiocination or argument; and of these we have shewn the philological construction, but which, as logically constituted, are acts of Judgment, disclosing and denoting *particular relations* called Judgments, which, when connected in *general relations*, become Discourse, Argument, or Operation of Reason, and are then judgments of Judgments, or *general judgments*, as simple propositions are *particular judgments*.

496. As every *philological proposition or particular judgment* is constituted of three words, a substantive and adjective connected by an affirmative, so is every *logical or general judgment* constituted of like terms or ideas, a *Subject*, a *Predicate* of that subject, and a *Copula* by which they are connected; whence they are logically and philologically coincident.

497. There are three ways in which Terms are logically united in the formation of Judgments and Arguments: firstly, by reciprocal *Relation*, and this constitutes the Analogical Judgment; secondly, by *Inclusion*, and this is the Syllogistic Judgment, or Proposition; and, thirdly, *Identification*, and this is the Generalological, or Inductive Judgment; all of which denote Relations,—Correlation, Continence, and Simulation.

498. Whatever we can know must be either *Experience* of fact, or Sense; *Inference* of Reason, or *Analogy*, that is, Relation of Consciousness; in correspondence with which there can, therefore, be but three principal modes of logical Conviction; first, a *Generalogism*, or Induction of facts; secondly, a *Syllogism*, or Subsumption of Reason; and, thirdly, an *Analogism*, or Consciousness of Relation; and this latter may have been the sense in which the Epicureans held Anticipation to be the principle of Demonstration, so that nothing is capable of demonstration of which the mind has not *Precognition*, or notice revivable by argument.

499. "In the common logic," says Bacon,* "the labour is principally bestowed upon Syllogism, while the logician scarce thinks of Induction; but touching it slightly, passes on to the forms of disputation: whereas we reject the demonstration by Syllogism as confused, and letting nature slip through the fingers whilst we take Induction for

* De Augmentis Scientiarum, § ii.

that form of demonstration which guards the senses, presses nature close, and rules over Works." But the method of Induction asserts the *Particular facts* of nature, experience and practice, as the method of Syllogism does *General media*, both of which escape the true logical foundation of *Universal Reasons*, which belong to Analogism.

500. Had not the logician a power of descending *Analogically* through Consciousness from the Universal correlations to particulars and individuals, Analytically, he would want the power of ascending *Generalologically*, or by Induction from Individual and Particular relations to Genera and Universal relations, Synthetically. In the first he descends from Internal Correlations to External Phenomena, and in the other he ascends from External and Particular Effects to Internal and Universal Cause. They are converse and extreme Processes, and are correlative and concurrent in the *Syllogism*, Antithetically; denoting Universal Cause as Intellectual, and Individual Effects as Natural.

501. Thus, there is a like reciprocation of the logical Organs and Operations that pervades the Faculties and Energies on which they depend, giving to each the same regulation and intimate correlation that renders their independent consideration difficult, while it multiplies the variety of ways in which Logic may be investigated and treated as Syllogistical, Inductive, or Analogical,—

Synthetical, Analytical, and Antithetical or Composite.

502. As the premises of the Analogism are intuitive, or immediately from Consciousness, and have the character of *Necessity*, while those of Syllogism are from *Reason*, artificial genera and Demonstration, and those of Induction belong to *Experience* of Sense, it is very evident that these Operations rank in the order here assumed, and that Conviction from Necessity is pure, categorical, and more authoritative than that from either Ratiocination or Experience; we are bound, therefore, to give precedence in Logic to the *Analogism*, to the investigation of which we proceed, although we thereby invert the common course wherein Logic is built up from Sensation.

CHAPTER IV.

ANALOGISM.

SECTION I.

INTRODUCTION.

503. THE whole history of human intellect bears witness that, whatever be the nature and subject of its speculations, Scepticism ever is the extreme to which Philosophers and the learned fly from the opposite false extreme and course of dogmatical Credulity.

504. But Scepticism is the resort of ineffectual endeavours, as Credulity is of supineness; and if Scepticism is, as has been said, the nerve of the strong mind, Credulity is the lassitude of the weak or indolent mind, and they are as opposed to just logical conviction as they are to each other, for such conviction leaves neither room for active Scepticism nor passive Credulity.

505. It was indeed the discordances of these extremes that first forced Philosophers in search of a Logical mean of conviction—a criterion and canon of Truth—an organ whereby to adjust and

harmonise their differences ; in the endeavour after which the speculative intellect of the Greek Logician carried him to the metaphysical and ideal extreme, as the practical mind of the Briton carried him to the opposite extreme of the physical or material and real.

506. Although, therefore, a happy release through Logic from the extreme consequences of Dogmatism and Scepticism has marked the progress of intelligence, it yet appears that learning has rushed into extremes in Logic analogous to those which obstructed the peace and progress of Philosophy, and that there is no other escape from the false extremes and failures of either than the disclosure of the true *Analogical mean* of reconciliation in and between the extremes of both ; and if Logic is to supply this mean to Philosophy, then it is first necessary that Logic should establish the true connecting mean of its own extremes, the one of which is *Syllogistic* and the other *Inductive*.

507. For although the science of *Logic* is especially founded on Intellect, and gives law to Understanding, it has been adapted principally to Mathematical and Physical inquiries, which belong to Matter and Sense, by its two most eminent authorities, who have been therein implicitly followed by succeeding Logicians ; so that in fact we have had only a *Logic of Sense* and signs, and a *Logic of Matter* ; but a *Logic of pure Intellect* and universal relation has been hitherto wanting,

notwithstanding the acknowledged importance of such a Logic, and a loose recognition of the mode of ANALOGY which leads to it, by Logicians who, at the utmost, have regarded Analogy as an indirect method of reasoning, as they did *Induction* also before the time of Bacon.

508. Every instrument is for good or evil according as it may be employed, and Analogy, as an instrument, is capable of both. The ancient Poets employed it indifferently in the construction of figures ; but when they mythologised with it by carrying the physical into the intellectual world, as when they identified the Sun and Apollo, through analogy of Light and Truth, and formed of them a God, visible and tangible to the sensual and ignorant multitude, and intelligible only to the initiated few, they employed Analogy in behalf of falsehood, for the sake of power, and so far as an instrument of evil. The abuse is, however, not that of the instrument, but of the agent and the artifice, for Christ, "who was the Truth and the Light," employed their perfect analogy logically and openly for perfect good.

509. But there are Analogies of nature which are *facts*, and there are Analogies of fancy which are *figures*, and there are Analogies of reason which are *truths* or axioms ; and these latter relations are more especially Logical, though each species is variously subordinate to reason.

510. The constant struggle of Philosophers after

absolute principles or grounds of knowledge, has run all their systems into paradox, because man can have no knowledge but of *Relations*. Hence, from whatever point of inquiry the Philosopher depart, it may be resolved into a *relation* to which he must by the law of consciousness, or order of his intellect, assign correlates ; but these are not *absolute* things, since by investigation they will be found to be *correlate relations* also ; and if the analysis be continued to the end, it terminates in an identical relation, of which the one correlate is the I, or *conscious Individual*, and the other the *Universal Consciousness*, which is all in all. Thus the *Universe is a System of Analogy*, beyond which Philosophy cannot penetrate, however we may diversify and complicate inquiry ; and to this we owe that the Logical Universe is the subjective form of the Philosophical Universe, and that Analogism is the Universal Organ.

ANALOGISM.

511. That an organ so obvious as the ANALOGISM should have lain dormant in Logic is to be attributed to this dogmatical and absolute cast of thought, to the devious paths of Analogy, the easy grasp and comparative facility of the other logical organs, the apathy of mind to pure inward speculation, and promptness to outward sensuous opera-

tion, whereby Analogy has been consigned to imagination, employed in construction of symbols, rhetorical and poetical allusion, or common illustration by example, and excluded from strict ratiocination and science, except partially in the Mathematics.

512. This long exclusion of the *Analogism* may also have been the same that rendered Logic altogether the successor of other sciences. Man began to make *particular* and practical observations before *general* ones, and the latter before he had thought of principles and the *universal*, to which the force of Analogism especially belongs; and, in the uncultivated state of his mind, to analogise rhetorically through similitudes or particular parities, was probably a later refinement of unlettered man, the natural logical course being from dogmatical inductions, through syllogisms of sense, to universal Analogism.

513. The Universe of Things and of Thoughts is a unity or universality coinclusively, and this unity of things is Universal Nature to which *Philosophy* belongs, as the Unity of Thoughts is Universal Reason to which *Logic* belongs; and these great primary unities are entirely correlative or *Analogous*, whence the mind is empowered to Reason of Things. And as Universal Nature includes every Thing, every Class and every Order up to the highest, so Universal Reason includes every Genus, Species, and Individual under it,

which arrangements coincide logically through Analogy, for without recognitions of similitudes there could be neither induction of similars, comparison, nor general or universal inference, or any Logic.

514. As the Things of Nature and the Thoughts of Reason concur in Signification through Language, so Philosophy and Logic concur through Philology, the Science of Language; and as the Things of Nature afford the *Subjects* of Logic, and the Thoughts of Reason its *Predicates* or Attributes, so do the verbs or Relatives of Language afford the *Copulæ*, by which they are connected in Propositions and Discourse; and thus Logic, Philology, and Philosophy, are one System.

515. These Analogies supply also the universal elementary matter of Logic, and confirm the principle and canon of all ratiocination and inference, viz. that *whatever is included in any Species, Genus, or Universal, partakes of its attributes and predicates*; whence *whatever is true of any whole is true of all its parts*, is valid also throughout every mode of ratiocination, and is derived or modified, and variously expressed by Logicians, from Aristotle's *Dictum de omni*, which *affirms* alike of the Genus, its Species and Individuals, and his *Dictum de nullo*, which *denies* in like manner, whence whatever is predicated of a term distributed, [*i. e.* in its universal or utmost ex-

tent,] may be predicated of everything under it.*
 “Whatever agrees with a Genus or Species must agree with all the Particulars contained under such Genus or Species;”† “If two Terms agree with the same Third term, they agree also with each other;”‡ “Whatever is predicated universally of any class of things, may be predicated likewise of anything comprehended in that class;”§ “Two things agreeing or disagreeing with a Third agree or disagree with one another.”||

516. On these Principles, or Principle, depend the Rules of Logic, as well for *proving* as for *confuting* of Arguments,—if the first, we must shew that the inference or conclusion *is* contained in the premises;** and if the latter, that the conclusion is *not* contained in the premises. And this law or canon well understood and observed, will prevent our being deceived, or deceiving ourselves, and deceiving, or being deceived by others, whatever be the form of argument employed. It is apparent, therefore, that the common argument by which the *greater* is inferred from the *less*, although it may be true with uncertainty, is always illogical through defective and exclusive analogy, and is rhetorical and illustrative only.

517. This Logical Principle of Agreement and

* Whateley, p. 74 ; Tatham, i. p. 16, &c.

† Wolfius, p. 75. ‡ Whateley, p. 75. § Ibid. p. 31.

|| Picquot, p. 84. ** Ibid. p. 102.

Union in a Third thing, and of inferring a third from such agreement, is that of UNIVERSAL ANALOGY, and holds good for all subjects. Every CAUSE is a union of *Action* and *Passion* concurring or agreeing in an EFFECT, and every Pair of Extremes is connected by a Mean, and all Media have Extremes.

This is the principle of logical Assent and Dissent, equally, but contrarily conclusive in Affirmative and Negative arguments; whence also the logical *Principle of Contradiction*, whereby it is impossible for the same thing at once to be and not to be.

518. Analogy is thus the foundation of the *Negative* principle and axiom of Contradiction or Identity, whereby a proposition cannot be at once both *true* and *false*, and the same truth cannot at once be affirmed and denied of the same thing; whence whatever is *is*, and cannot *not be*. And this principle is that of all Logistic and Mathematical demonstration, and gives authority also to the *Rule of Contraries*, whereby what is truly *affirmed* of anything may be as truly *denied*, or its contrary affirmed of its contrary.

519. In like manner the *Positive*, or Affirmative Principle of sufficient Reason, or that nothing happens without a Reason, why it should be so, and not otherwise,* is also founded on Analogy,

* Leibnitz's "Theodice," and Papers with Clarke, p. 21.

for every reason is a correlation. And this principle holds throughout Physics and Ethics.

520. These principles, the former of which Leibnitz distinguished as the *principle of the Identity of Indiscernibles*, he called the two Great Principles that give to Metaphysics real and demonstrative science.* And Logical Demonstration in every mode resolves into clear apprehension and consciousness.

521. All Logic, and especially that of Analogy, seeks the *agreements* and not the *differences* of things; and he who argues for truth seeks points of reconciliation in a divided question, and not, as polemics do, for points of difference, which widen disagreement, and raise doubt, by disturbing the unity upon which truth and conviction depend.

522. It is to the disunion and discordances of assumed relations, the want of agreement or similarity in things arbitrarily forced into comparison and false analogy, that we owe the vulgar proverb, "Comparisons are odious," when in truth they afford the images that most enlighten and delight the mind when formed on true perspicuous analogy.

523. There is then a Principle of Unity that makes of all things a Systematic Universe, Logical and Philosophical, whence every Individual therein

* Leibnitz's "Theodice," and Papers with Clarke, p. 94.

is a Unity, and every Whole the Sum of all its Parts. Every Science, therefore, whether regarded Analytically or Synthetically, is a Whole founded on the simplest Unity; thus Philosophy itself, which is the first and greatest Science, the Science of Science, or Science of the Universe, assumes as a first position, or elementarily, the Unit Man, or Mind, or the Universal Being, the Individual Identity or Unity, or the Universal Identity that Unites all. Such also are all *Categorical, First Truths* and *Final Truths*.

524. In like manner every subordinate science proceeds either from an elementary *Unit* or an *Inclusive*. In Arithmetic, the Science of Time, it is called a *Unit* or instant. In Geometry, the Science of Space, it is a *Point* or position. In Mechanics, the Science of Motion, it is a *Pulse*, impulse, push or moment, and throughout the Mathematical Sciences, which are by way of eminence called Exact, or Logical, this principle of Elemental Unity prevails. It is the same in the *Æsthetical* or sensible Sciences, all Beauty, Proportion, Symmetry, and Harmony are Unity. In the Physical, all Classes and Affinities are Unities; and throughout Ethics, Moral, Political, and Religious, the first and pervading principle is Unity, Individual or Universal.

525. But above all, if there be any predominance in this respect, is Logic the Science of Unity, and claims it as its first position and chief

attributc. Mind is a principle of Unity, thought is a Unifying process, all Argument and Discourse is an Identification. By Memory we Identify, by Imagination Unify or combine, and Reasoning is identification of Relations and demonstration of Unity. Thus Unity is the *Logos*, the Reason, of all *Logic*, the pervading principle of all Discourse; as it is the Word and Wisdom that framed and holds together the Universe; and this Unity is the Principle of *Analogy*.

526. Thus all Logical Processes resolve into *Universal Analogy*. The first and simplest of these is *Definition*, which unites and exhibits the Genus and Individuality of a Term, by its relations of Sameness and Difference in a *Proposition*, which is a judgment or second and intermediate process uniting Terms in relation as Subject and Predicate, by a Copula, relative or connective; and also a third and final process or *Argument* in the various *Organs* and Operations of Logic, which are different modes of proof, or forms of demonstration, or conviction by Identification, or Unity in the Relation of their Premises, whether Analogical, Generalogical, or Syllogistic.

527. Yet must we distinguish these forms or modes of Argument as Instruments of Demonstration and exposition of proof only, and not as Argument itself—the reason, or *Logos*, and matter, or substance of conviction of consciousness—for all such argument, reason, and conviction, consists in

equation — relation of Analogy — or correlation, whatever be the form or instrument employed ; and for such matter Logic must appeal to Philosophy, Logic consisting in regulation only, according to Genera, Species, and Individua.

528. Accordingly, every degree of evidence is a degree of analogy, so that there is neither *possibility* nor *necessity*, nor any *probability* but of Analogy, and all dependent on that *Uniformity of Nature* which the human mind has ever recognised, and on which it has relied in all its thoughts, acts, and expectations, and such is Analogy, physical, sensible, and logical.

529. All Unity is such relatively to Variety ascending or descending ; it has, therefore, *Minima*, *Maxima*, and *Media*. The Minimum of Logical Unity is *Individuality* or particularity,—the Maximum of Logical Unity is *Universality*, and their medium is special *Generality*, all of which are correlate logical unity having each an appropriate Organ and Process. 1st. A Process from *Minima* which identifies or unites many particulars into Genera and Universals inclusively ; and it, and its Organ, is called an Induction or *Generalogism* ; 2d. A Process from a Maximum or Universal, which demonstrates categorically, by Medium of some Genus, a Particular conclusively ; and it, and its Organ, is called a *Syllogism* ; and, 3d. A Process from equal Media identifying in universal correlation, Individua, Genera, and Universals,

coinclusively; and this process and its Organ is *Analogism*, and comprehends the other two.

530. The premises of the *Generalogism* or Induction are always less than the genus, or category of the question; and those of the *Syllogism* are always limited by its predicament; but the premises of the *Analogism* are absolutely unbounded, are greater than the Universe, and include its Author; its unity is infinity, and its infinity infinite, so that wherever it can find or imagine a paradigm, or parity, or maintain an equation, it can attain a logical conclusion.

531. It is this sublime quality of the Analogism that has principally betrayed it in Logic, and consigned it to desultory Rhetoric and Poetry. It is, nevertheless, the sole means of Theological and Divine argument, in which the antient and modern Mystics have also employed it, so fallaciously and so contrarily to the sobriety of ordinary reason and judgment as also to have discredited it in Logic.

532. Hence the principal danger from Analogism is the giving itself up to the license of Imagination instead of the government of Reason, on account of the infinity of its relations which constitute the Universe; and although it exists under a perfect and divine subordination, it requires the guidance of reason to conduct it free from error.

It is this misdirection of the Analogism by Imagination that has repudiated it in the ordinary Logic.

533. These influences were in operation before the time of Aristotle, and led that eminent genius, who enterprised in all knowledge, to consign both Analogism and Induction to Rhetoric, and to admit the first as Comparison or Paradigm* only in his Logic; building solely on the categorical ground of the Syllogism, with such wonderful acumen and completeness however, that succeeding Logicians have only ventured to abridge or vary, but not to add to, or depart from it, with the partial exception of Bacon, who rescued Induction from Rhetoric, and thus established the Generalogism imperfectly in the more confined area of Physics, wherein nevertheless it has produced such prominent effects, and inspirited such wonderful achievements for the world, that sober lookers-on stand aghast!—although, in a more elevated view, it has accomplished nothing for the Moral Sciences, but has degraded the tone and tenor of intellect.

534. We are far from blaming its great Author for this, since it was the only escape for Philosophy at the time from the thralldom of the Scholastic Disciplines, which obstructed all advancement in science and the progress of civilisation. A reform ordained doubtlessly by the Divine Inspirer of Wisdom, that knowledge might not stagnate, nor his great design for the gradual developement and growth of intellect stand still.

* Tatham, vol. i. p. 57.

535. Philosophy, in the early ardeney of Intellect, had first preceeded Logic, and overshot its basis; checked then for a time by Logic, and now again pursuing its rapid way with insufficient guides, it is approaching a position from which it will have to commence a new career by a new reform of Logic.

536. To qualify Analogism for this, it will be necessary to control the expansible power founded in the natural constitution of the mind, whereby it is urged to extremes, and led to seek beyond the legitimate boundary of knowledge the Cause of Causes, the Condition of Conditions, the Element of Elements, and to lose itself in interminable inquiries and endless suppositions and oppositions.

537. It is first incumbent, therefore, to determine the boundary of its authority, which reason tells us must be that of knowledge, whence the range of Logic and Philosophy is the same, and all employment of Analogism or the other modes beyond this is invalid. Now such boundary are the philosophical categorics of *Relation* and *Existence*, of which we have shewn the Identity; and hence it is plainly the first and universal Principle of Logic and Philosophy, that *there can be no reasoning or logical inference where there is no essential or existing Relation*, Material, Sensual, or Intellectual, and that all such relations are *Analogical* or Correlative.

538. There is hardly a page in any work of argument wherein Analogy has not been employed in aid of Reason; yet have Logicians strangely excluded the Analogism as an accredited organ from Logic,—and a late eminent logician, although freely employing analogical reasoning, and illustrating the syllogism both grammatically and chemically, does not acknowledge the Analogism as an Organ of Logic, in which use and neglect of Analogy he does, however, but agree with his predecessors and existing schools.

539. He remarks concerning Analogy:—"1st. When two persons are said to have the *same* quality, &c. what we predicate of them is evidently a certain *resemblance*, and nothing else. One man, *e. g.* does not feel another's sickness, but they are said to have the *same* disease if they are precisely *similar* in respect to their ailments. 2d. Such qualities as are entirely *relative*,—which consists in the *relation* borne by the subject to certain other things,—in these it is manifest the only *resemblance* that *can* exist is *resemblance* of *relations*, *i. e.* ANALOGY. When it is said, therefore, of two courageous men, that they have both the *same* quality; the only meaning this expression *can* have is, that they are, so far, completely *analogous* in their characters, having *similar ratios* to *similar* objects. In short, as, in all qualities, *sameness* can mean only *strict resemblance*, so in those which

are of a *relative* nature, resemblance can mean only *Analogy*.* The whole of which amounts in substance to admitting that there are *Analogy of Identity* and *Analogy of Relation*, and that these are *the same differently*, or in degrees.

540. Thus *Analogy*, as it is commonly understood and interpreted by Logicians, signifies only *resemblance* among objects, although it is strictly significant of *real Relations*; as of kindred in Father and Son, &c.—as of concurrence in Agent and Patient—and of all the affinities and correlations of nature and the universe. And it is upon this direct, immediate, and necessary *Analogy*, that the indirect and remote Analogies of similitude and parity depend. Hence the logic of *Analogy* is in the latter respect only *rhetorical*, illustrative, and of little force or evidence, while, in the former, its inferences are strictly logical and conclusive, as well as the sole ground of logical evidence,—and *from every relate we infer irresistibly its correlate*.

541. *Analogy* is, therefore, the common name of all true natural relations universally,—the bond both of thoughts and of things,—the connective of nature and truth through which the Logical and Philosophical Universe is identified and made intelligible; and in fine, without such universal *Analogy*, there could be neither genuine philosophy, nor logic, nor communicable knowledge. Hence

* Whateley's "Logic," 3d edit. p. 275.

the prime importance we have claimed for this neglected logical mode.

542. Nothing can be signifieant but through natural or conventional Analogy; for even associations and arbitrary signs are conventional analogies; and it affords an inevitable presumption of the universal nature of this principle that the earliest language of mankind, and the most powerful eloquence of refined thinkers, are alike metaphorical through analogy,—substituting the relations and similitudes of one object, or class of objects, for another; and that we can no otherwise express our most definite and metaphysical notions than through similitudes and relations analogically. The universal relation and systematic subordination of things, upon which their universal Analogy depends, enable us to allegorise and poetise every subject with an effect of seeming reality.

543. Yet the Analogism, like the Syllogism and Induction, is liable to error and of difficult use, from the boundless amount of defective premises presented to it, demanding adequate discriminative powers and capacity in the Logician, and a strong guard against superstition and mysticism, to which remote analogous premises are liable to conduct, by constructing false and arbitrary relations, and unnatural and false unities rhetorically and fancifully; but as genuine philosophy advances by means of Analogy, it will reciprocate support and confirm the logical foundation of Analogism.

544. The Pythagoreans, and the Philosophers their descendants, have dealt greatly in Analogies. The harmony of the spheres, which Pythagoras deduced from the analogy of the harmonic proportions which the planetary orbs bore coincidently with those of the Monochord, he only could have called *Music* metaphorically, although grosser minds, or the poetically imaginative, have literalised it as real, to the edification of satirists who find in metaphors and allegories food for ridicule.

Such analogies are indeed remote, but not without some genuine foundation; and though inconclusive like defective inductions, have conducted such minds as Moses, Kapila, Pythagoras, Plato, Kepler, Harvey, Tartini, Columbus, and Shakspeare's, to noble inspirations, inventions, and discoveries; Analogy, although abounding with deviations, being the broad way of science, mere natural similitudes affording the foundation for comparative anatomy, and the chief instrument of improvement in Physiology.

545. Thus Harvey argued platonically from the *conceptions or Ideas of mind*, by a beautiful application of Analogy, to the *Conceptions of the body*, as patterns begetting likeness in each case, and from the Conception, or *εἶδος*, of Art to its Analogue the Conception of Nature, thus reaching the otherwise unattainable notions of a universal Seminal and Generative principle,* Animal and Vegetal,

* Willis's "Life and Works of Harvey," pp. 155, 578.

wherein the *Active* and External impressions are masculine, the *Passive* and internal Conceptions are feminine, and these united or *concurrent* in the ovum or seed.

546. Newton, in a similar course, established his system of Gravitation on the principle of Analogy, for his experiments extended hardly beyond a small portion of the earth's surface, and he trusted to Coincidence of the Relation of quantity for a conviction amounting to relative certainty. But the relations of Quantity are Analogous. We have no evidence from the demonstrations of the Mathematicians to the experience of the Chemists, and the reasonings of the Moralists, but through Analogy. It signifies not, however, by what term we denominate our process, the test of evidence is the clearness of conviction in approach toward consciousness, whether such evidence be Mathematical, Analogical, Syllogistical, or Inductive. "There is nothing to observe in the things we think of," said Hobbes, "but either in what they be like one another or *similar*, or in what they be unlike, or *dissimilar*."* And daily observation goes to prove that the whole physical Universe is connected throughout in one system of dependent analogies.

547. In our judgments of the acts, inclinations, tastes, motives, and determinations of other men, under every variety and combination of circum-

* "Of Human Nat." ch. viii.

stances, we infer *Analogically* from our own motives, inclinations, tastes, and determinatives, in full reliance on the uniformity and analogy of nature, using our experience of ourselves for judgment of others, and correcting our errors therein by experience of others according to the variety in unity or convert analogy of nature. So also in the public judgments of the acts, motives, and circumstances of nations by statesmen and politicians, inference is taken by *analogy* from experience of the acts and determinatives of other nations; and all our knowledge of human nature is referable to such analogy, and all our judgments therein are *analogical*; but the actual experience of men is too brief and narrow for judgment and inference without the aid of analogy.

548. Logic is the evidence of things not seen, whence all Faith belongs to Reason,—and all such evidence is Analogous,—inferring, according to uniform laws, uniform consequences through Analogy or Relation; and this is especially the Logic of Theology, wherein St. Paul establishes the Reason of Faith—the evidence of things not seen—through which we understand that the Universe was framed by the Logos, Word, or Reason, and Wisdom of God, so that things which are seen are not made of things which do appear—whence the Invisible things of Him from the creation of the world are clearly seen, being understood by the

things that are made, even His Eternal Power and Godhead.

549. Thus also are all Parables, both sacred and secular, and those especially of Christ, true analogical reasonings and arguments; and the proper caution only in the use of such, as throughout logic, is to establish correct premises, so that the relations or analogies we employ should be natural, coincident, exact, and true.

550. That the best things are misapplied, and ever most liable to be abused, can hardly need illustration; and such, we repeat, has been the fate of Analogy which extends to all things, and requires an especial guard against misapplications, principally from defective relations and far-fetched allusions wherever visionary doctrines have been founded, or others equally ridiculous and horrible; whence some minds have taken fright at such terms as Analogy and System.

551. *Analogy* is, nevertheless, the foundation of that *strength of concurring circumstances* that often exceeds *direct testimony* in establishing truth and conviction; for the latter may be true or false, but the former involving intricate relations in identity, is of great and logical force, removes doubt, and is the strong port of religion and law whence our lawyers and judges determine both law and justice by case and precedent; *i. e.* by Analogy, the ground of equity, rather than by legislative ordi-

nances or interpretation of laws ; and our divines appeal through analogy of nature to Deity in aid of Revelation and the Scriptures.

552. As every just argument and logical inference must be founded on some true Analogy, so must every false judgment and inference spring from some apparent but false Analogy ; whence, truth being but *one*, and falsehood and error *infinite*, a vulgar prejudice has arisen against Analogy. It is hence evident how essential it is to establish the philosophy of Analogy universally for the perfecting of truth and logic.

553. To grasp truth of things and thoughts as material or spiritual *Substances* is comparatively easy ; but to grasp truth in *Relations* requires a nicety of poise that is difficult to the undisciplined mind. For if truth and knowledge be, as they are, nothing else than correlation of Analogy, then to lean on either of the correlates as an absolute ground, is to miss the relation and the truth.

554. It is no wonder, therefore, that men in seeking truth in *the absolute* so constantly fall short of or overshoot it ; nor that the progress of reason, which is truth of relation only, makes slow advances, and that Analogy, which is relation of relations — truth of truths — has not found many advocates in the ordinary run of minds, either as idealist or materialist, as dogmatic or sceptic, nor at all as egotist.

555. Men seek the solidity of truth—a relation—in an absolute substance, ideal or real; but “God hangeth and balanceth the world upon nothing.” Mind is a process altogether, and the knowledge it has of truth is the relation it produces. It does not energize things, but relations, and these it connects through Analogy, or relation of relations, while the Absolute is altogether beyond its sphere—a relation above it.

556. Hence, again, nothing can be known but relations, for though we acknowledge their correlates, these, being the conditions of the relation and knowledge, must be for ever unknown. Just as the positive and negative correlates of Electricity remain totally unperceived until as conditions they are brought into new or varied relation, and rendered sensible in spark, shock, sound, taste, or smell. But these physical and metaphysical conditions into which whatever is, or can be known, may be resolved, are analogous and identical in intellect, and substantially referable to universal and Divine intellect and being, who *Is*—all in all—and every where always! and however the prepossessed mind may struggle for other foundations suited to false intents, or gross prejudices, it will only flounder from one difficulty to another; and all the inquiries of the sincere and adequate intellect must terminate in the humble confession that man can know nothing finally but himself and God, and these only through necessary Analogy—a logical equation which, when

fully wrought, will disclose his physical and sensible relations, and his moral and religious interests and obligations.

557. As to False Analogies, they are of easy solution, being in general false inductions — inferences from single instances and individual examples, defective through remoteness or absence of true relation or analogy. *False Analogy* is, therefore, properly called *Anomaly*, not only philologically but logically. And to become logically authoritative and unerring, Analogy must be founded on direct, real, natural, conscious, and true Relations; and although it may be illustrative, it can be of no other authority when fictitiously assumed or untrue. So much by way of introduction: we proceed to more strictly regard the Analogism as a *Logical Organ*, which, although not hitherto admitted by logicians as a lawful organ, has been most constantly and remarkably employed by them on all occasions as a spurious weapon and persuasive.

558. Before the time of Aristotle every mode of argument, and the whole of Logic, was rhetorical; but he having assigned induction to rhetoric, and confined logic to the syllogistic form, as Bacon did to the inductive, they both consigned Analogism to Rhetoric; notwithstanding it is allowed to be theoretically perfect in mathematical proportions, and that discursive Analogy is practically and philosophically essential in Physics.

559. The term *Analogy* was accordingly first

and principally employed in its logical sense by the mathematicians, with whom it signified *Proportion* and *Ratio*;* from them it passed to the architects, and supplied their laws of symmetry as employed in the Ark of Noah and the ancient temples, from that of Solomon to those of Augustus, as remarked by Vitruvius; and from these it was taken by the artists as deduced from the human figure, till, finally, it was corrupted into the symbols of masons and similitudes of poets and rhetoricians.

To reclaim its true signification, and extend its use as a logical organ, is our main object, fraught, as we conceive it to be, with the most important interests of science, religion, and law.

SECTION II.

ANALOGISM.

560. Having in a previous chapter determined the position of Logic, and marked the Faculties and Energies upon which its Operations, modes or forms of logism or ratiocination depend, we proceed to investigate these latter more particularly; and first and principally the ANALOGISM or Analogical

* See the fifth book of Euclid, which has been justly pronounced a master-piece of human reason, concerning *Analogy*, on which the whole of the mathesis rests with Algebra, which is the art of Resolution and Equation through Analogism.

process, or logic of universals, since it is the basis of the other modes, and appears to have been hitherto unattempted, and to be a *third organ* requisite to the entirety of the science, discipline, and practice of Logic: for the reception of which we have endeavoured to clear the ground.

561. By *Analogy* [*Ἀναλογία*], we here understand equality or reciprocity of reason, ratio, or relation, for reason and relation are the same; or in fewer words, *Analogy is parity of reasons or relations*;* and by the term ANALOGISM we denote a form of logism, or mode of ratiocination, from equal reasons, reciprocal relations, or equation; through which we descend in subordination from universal relations, through the general to the particular, transcendently and analytically; and do so upon this principle, law, or canon of all Logic, and of the Analogism first and especially, that NO RELATION IS CONCEIVABLE WITHOUT CORRELATIVES, whence *the correlations or reasons of the Universal and Genus are inclusively also the correlations or reasons of the Species and Individual analogically throughout Logic.*

562. Upon this depends all ratiocination; for if there were not such fundamental Analogy or universal relation and subordination in the nature and constitution of both thoughts and things separately

* See "Tritogenia," p. 46, n. 5 and note 1. Arist. Nichom. Ethics, v. b.

and reciprocally, in vain should we attempt to reason or inquire concerning them ; because without such co-ordination all would be confusion of thoughts and confounding of things, or a chaos of thoughts and things : and *Words* being the representatives of *thoughts* and *things*, ought also to have the same Analogy.

563. Hence the validity of the premises in all the modes of ratiocination depends upon their exhibiting, in adequate terms, the true relations of words, thoughts, and things ; and hence it becomes a universal logical axiom, equally applicable to each of the modes, *that the conclusion is no further valid and true than are its premises, and proves no more than they truly contain or imply.*

564. To *conclude* and to *include* are, therefore, logically synonymous ; thus, in the judgments of necessary relation, or Analogy, there is a reciprocal conclusion of the correlatives ; as the conception of father and son mutually include, and therefore conclude, each other reciprocally ; nor have we a single idea or thought that stands alone or independent of relations, and we may in all cases assert truly such essential relations, and conclude logically whatever the admitted or given premises truly include, and no more ; and this, although attained in a different course, comports with the rule of Aristotle, which attributes to the species whatever is predicated of its Genus. It does not follow, nevertheless, but that true conclusions may be drawn from false

premises, if the latter are wide enough to contain them; although it is the admirable property of truth that falsehood (which owes all the force it ever has to some sort of connexion with truth) does not spring from it in any case.

565. If, therefore, to *Infer* means to bring into or under, then does it denote *inferiority*; and as Conclusion signifies Illation or Inference in Logie, so to *conclude* is to *include* in an argument, and the premises of an argument or ratiocination are superior to the conclusion or Inference which is inferior or comes under it. It is, therefore, we repeat, the very *essence of logical conclusion to infer some thing inferior to or included in the premises*, and not to disclose or generate, as some imagine, new and extraneous truths, for this is the office of philosophy. It may seem otherwise in the induction or Generalogism, which from particulars infers General of greater extent, and appears to generate truths; but its conclusions are nevertheless invalid beyond the particulars premised, and are liable to assume false as true.

566. It follows that no organ or operation of Logie can have the power of generating or begetting truths, but merely of displaying the truths involved in their premises according to the uniform regulation of all nature; it being not the object of Logie to beget *truth* but *conviction*, *truth* being nothing else than *Logical relation*, or agreement of Words, Propositions, Arguments, and Things,

and signifying *trowed* or *tried*, i.e. proved or measured by a *third* or mediate.

567. *Truth, Proof, and Demonstration*, words so constantly employed to denote the determinations of Logic and the Sciences, through reason and experience, are alike dependent on, and consist in, the perfect accordance of things or thoughts brought together or compared; which accordance is some parity, similarity, sameness, or identity, or *reality of relation*, and is consequently denoted by the terms truth, &c. Hence the perfect accordance of anything with, or within that wherewith it is compared constitutes all logical proof, and resolves into Conscious Relation, *Analogy*, and Reality; and thus all reason is relation, and all relation consists in partial or perfect identity, sameness, or similitude, and finally all ratiocination resolves into the circle of Identity or *Analogy* comprehending variety in unity.

568. Thus, when we prove any number from its elements: as 4 from 4×1 , or 2×2 , &c., there is a perfect accordance of the whole with its parts or elements, and this is *mathematical demonstration*. Or when we conclude that twice two is equal to four times one, because they are both *equal to a third* thing which is four, there is a perfect accordance and *Logical proof*, or when we prove the same by a like number of pebbles, we have *ocular demonstration*. And, again, when we exhibit the perfect accordance of the various Relations of co-

lours, sounds, &c., with their Primary triads through their *intermediates or thirds*, we have perfect *Physical and Sensible Demonstration*, anatomically ; and so also universally through *Analogy*, which is *Identity in Diversity*.

569. The sole principle of Logical inference, whatever be the mode or instrument employed, is the *connecting two or more extremes by a third or mean*, and thereby producing a Logical Unity or Identification. When, therefore, we aim at proof by *Analogism*, Similitude, or Comparison, we establish two extremes between which a true connecting mean is alone required to perfect a Logical conclusion, well expressed by the mathematical symbol and term $\therefore$ therefore ; and such mean is the correlative of the extremes compared, resembled, or *Analogised*. The failures of this mode are accordingly principally referable to the remoteness of the extremes whereby the identification or relation of the mean is weakened in proportion to the degree of remoteness ; and it is the same throughout Logic.

570. All the inferences of Reason, by which from two or more known things we justly conclude a third or other things required, are, therefore, without exception, inferences of necessary Relation or *Analogy*, including every true and perfect deduction of Reason, whether Physical, Mathematical, or Moral ; and as to their validity, it depends on that of *Reason* itself, the etymology of which,

traced through *Ratio*, from the past participle of *Re-ri*, to Think or *Reflect*, makes it synonymous with *Re-sound*, *Re-signify*, or *Reciprocate*.

571. There is hence no other foundation for Reason and reasoning than universal Analogy; for what do we do in all our reasonings and conclusions but produce or determine a Unity, which is to shew by an equation that this thing is the same as that, or that these things are one, or *Analogous*? *Every unity or whole is the sum of its Relations or Parts.*

572. As, however, *Truth*, in the abstract and universally, is *relation of Analogy*, and as there may be, and are, arbitrary and artificial *relations*, so there may be and are, artificial *truth*, and artificial *Analogy*, or accommodation of one thing to another, — and hence that may be true and analogous in one respect which is false and irrelative in another — the foundation of all discordance in reasoning among men; but as all propriety in Art is referable to Nature, so is the remedy for all clashing opinions, and reasonings from *artificial* relations, to be referred to those *natural*, true, and analogous relations which are admitted and exist fundamentally, the artificial ground being thereby removed.

573. The *logical truth* of any thing is its identification with Consciousness. If it be of simple Consciousness it is *truth of reason*; that is of conscious relation, or subjective truth. If it be of any

thing out of Consciousness it is *truth of sense*, that is objective truth — an effect—a fact or *philosophic truth*. And thus the phases of truth vary with the phases of Consciousness and Science.

574. Hence, all logical evidence rests originally upon that Analogy, or universal Relation, wherein the Subjective, Significative, and Objective systems coincide and concur, and thereby render knowledge uniform, consistent, and conclusive; and thus the *Analogical process* is at the foundation of the other modes.

575. It is not, however, to be wondered at that this process should not have been early unfolded; nor ought we to expect its perfect developement in the commencement, because it depends primarily upon a perfect developement of the universal Objective system, of which, at the same time, it must be the principal means; whence it depends, also, upon a like perfect developement of the universal Subjective system, or of mind, no less than also on a perfectly significative system, or a perfectly analogous Language; and these may serve to explain why a thing so evident as *reasoning by analogy*, and so common in its discursive form, should yet have produced no attempt to discover its laws, and reduce it to science, in the manner of the other modes, which had, like most things, imperfect beginnings. Something will nevertheless be accomplished, in the disclosing of a principle and making a right beginning; for these, as the first and

greatest of logicians has remarked, are not only the chief, but the most difficult parts of a performance.*

576. Although the *analogism* is hardly in any form recognised as a mode of Logic, and not at all as a legitimate organ, it is nevertheless of the commonest use, all the illustrations of argument and discourse consisting in comparison and analogy; and it is owing, perhaps, to this very reason, that it is not so regarded. On the other hand, the *syllogism*, which is of all the modes the least natural, and is a disclosure of extreme art, has been generally regarded as the almost sole instrument of logic; yet the essential difference of *analogical reasoning* from the *syllogistical* and the *inductive* has been universally admitted by logicians; we, therefore, innovate little in logic by treating it as a distinct organ.

577. Analogy, as a manner of reasoning, could not escape the penetration of Aristotle, nor the sagacity of Bacon, who have, accordingly, each just noticed and named it; not, however, in its correct and universal sense, for which an adequate basis was wanted, but regarding it, not as necessary and demonstrative, but as fictitious and illustrative, both these and succeeding writers and logicians have employed the term rhetorically, and not logically, in the confined acceptance of *Example*

* Aristotle, at the end of his "Soph. Elenchi."

or *Similitude*. Accordingly Aristotle has asserted* that conviction in every case is founded upon either Syllogism or Induction, and has omitted Example or Analogy.

578. Aristotle was undoubtedly aware, also, of the necessity for a universal basis to the validity of the syllogistic process, although he overlooked its Analogical foundation, and accordingly attempted to found it upon the *Categories*, predicaments, universal genera, or philosophical arrangements of the Pythagoreans. Nor is such a basis less essential to confirm the conclusions of the generalogism or induction of Bacon, since that also owes its entire force to the degree of universality in the assemblage of its members or particulars; some inquiry concerning it is, therefore, pre-essential to all logical process.

SECTION III.

CATEGORIES.

579. As Reason is a Universalizing Faculty, which gives laws and unity to thought, its first and highest function consists in determining what are those *Universals* by which thought is authorized and regulated, and which have received the ap-

* "Prior Analytics," ch. 23.

propriate name of CATEGORIES, or Universal terms. These, as anciently collected and arranged by Aristotle, and as applied by Kant in our time, are arbitrary arrangements, rather than necessary logical and universal elements, into which, nevertheless, they are resolvable.

580. The Categories, as collected by Aristotle, and delivered at the beginning of his "Organon," or logical treatises, are 1. *Essence* [Syn. Entity, Existence, Substance, Subsistence, Substratum, Matter, and thing absolute]; 2. *Quantity*; 3. *Quality*; 4. *Relation*; 5. *Space* [place, and where]; 6. *Time* [when]; 7. *Position* [posture, situation, figure]; 8. *Possession* [to have, or habit]; 9. *Action*; 10. *Passion* [reaction, resistance]: and their genealogy may, perhaps, be correctly exhibited in the following analytical table:—

I. ESSENCE—

2. QUANTITY —	3. QUALITY —	4. RELATION —
5. Space — 6. Time	7. Position — 8. Possession	9. Action — 10. Passion.

581. *Essence* or *Substance*, and *Qualities*, have both been used to drive each other out of being, by arguments which, either make Substance everything and Qualities nothing, or, *vice versâ*, make Qualities Substances and Substances Qualities. In pure Substance there is *Passivity* only—and *Activity* only in Qualities; and as one of these cannot be without the other, or Action without Reaction, they are Correlatives, of which Analogy

supplies the Logical mean, or connecting third. *Space* and *Time* have the same Analogy, and *Quantity* is their connecting mean or Genus. So *Position* and *Possession* are Analogous *Qualities*, and Action and Passion are prime *Relations*.

582. *Time* and *Space*, about the nature and attributes, and reality of which, common sense has no difficulty, have been called the stumbling-blocks of the Philosopher, and have been very variously interpreted. Aristotle truly regarded them as *Categories* or Universal Principles, with whom some have regarded them as *Ideas* of the mind, and most others as *Perceptions* of Sense; but none have satisfactorily determined their true nature and relations.

583. Analogical Philosophy determines them to be universal Ontological Principles, *Time being the most general or universal form of Activity or Action—Space the most general form of Passivity, Receptivity or Reaction*,—that they are Correlative Extremes, of which *Motion* is the correlate Mean and Measure; and assigns to them three Correlative Disciplines or Instrumental Sciences; viz. *Arithmetic* or the Science of Times, *Geometry* the Science of Space, and *Mechanics* the Science of Motion.

584. Thus the Categories and Post-Predicaments are analogically resolved through all Existence and Consciousness, from Relations of Action and Passion into Quantities of Time and Space,

and Qualities of Possession and Position, whence the Correlate Universality or Identity of Mind.

585. It follows as a Corollary, from the foregoing analysis of the Categories, that whatever *Exists* is either *Quantity*, *Quality*, or *Relation*. The most universal *Relation* is that of *Action* and *Passion*; the most universal *Qualities* are those of *Possession* and *Position*; and the most universal *Quantities* are *Time* and *Space*.

586. And this distribution of the Categories is authorized by the Stagyrte and his followers, who regard *Essence*, or *Substance*, as first and chief among the Categories, and *Quantity*, *Quality*, and *Relation*, as of secondary importance; the others are consequently subordinate to these.

587. It is to be remarked, however, that the *Essence*, or primary matter of things and thoughts, as the necessary condition of knowledge, must be in itself unknowable, and that *Quantity* and *Quality* are *Relations*; and upon these the other Categories depend. Hence relation and essence, or *the relative* and *the absolute*, are the most universal, or first categories—the *matter* and *manner* of all knowledge.

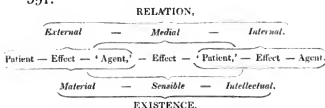
588. Things may, therefore, be considered as *known*, or as *existing*; and since nothing can be known but *relations*, or the *manner of being* in things, the next universal genera of things (or predicaments) are those universal relations to which they may be referred in our knowledge: we err,

therefore, when we regard knowledge as comprehending *the absolute* in things, notwithstanding this is an error more vulgar than that of regarding as real the apparent or relative diurnal motion of the sun. It follows, hence, that all our conceptions of things as *absolute*, or independent of the mind, are but figurative or ectypal, through analogy; and that all our real and Archetypal conceptions belong to the mind as analogous RELATIONS.

589. *Space* we have defined *the most general form of Passivity* or *Passion*, and *Time* *the most general form of Activity* or *Action*; whence Universal Passivity or *Space* is the *Universe*, and Universal Activity or *Time* is *Eternity*. Each may be proved by analysis or synthesis, and both are correlative through antithesis, each being the measure of the others through number and motion. Finally, being universal, they are *Categories*, conjointly expressed by the term *EXISTENCE*.

590. Hence, if we generalise every special and particular Passivity we universalise them into *Space*. If we also generalise every special and individual action we also universalise them in *Time*. And, as every effect resolves into Action and Passion, so all *Existence* resolves into Time and Space. Finally, as Space and Time resolve into Passion and Action, which never subsist apart, so the latter unite Knowledge as the prime *Category*, *RELATION*. Thus exhibited in the following Table:—

591.



The term EXISTENCE may be substituted by that of CAUSE, which has precisely the same generic relations and principles; as we have shewn that *every Cause comprises an Agent and Patient in its Effect*,—that in *Material cause* and effect its Patient is External or Material, its Agent Medial or Sensible, and the Fact External,—that in *Sensible Cause* and Effect the Agent is External, the Patient Internal and the Effect Medial, and that in *Intellectual Cause* and Effect the Patient is Medial, the Agent Internal, and the Truth or Nome Internal; the whole of which strictly coincides with the above arrangement.

592. It is apparent, then, that the CATEGORIES are no other than Genera or Universal *Relations* of Being or modes of *Existence*, and that if the External, Medial, and Internal, are the most Universal Relations of Existence, and that the Relation of Quantity is External, that of Quality Medial, and that of Relation itself Internal, then has Aristotle justly regarded these as Prime Categories, of which the others are species, and we are justified in the Analogical distribution we have given them.

Further, agreeably to which Quantity is the chief Category of *Discipline*, as Relation is of *Science*, and Quality is of *Art*; Art including Figure and Habit, as Science does Relations, and as Disciplines do Time and Space.

593. That Aristotle regarded his own collection of Categories as incomplete is evident from the addition he made of his POST-PREDICAMENTS of *Prior*, *Subsequent*, *Opposite*, *Simultaneous*, and *Motion*, and that they have been so regarded by others is also apparent from the additions and variations they have received from succeeding writers.*

594. *Erigena*, or John the Irishman, a disciple of the Venerable Bede, and friend of Alfred the Great, a man of vast intellect and learning, and author of many works, in his treatise "*De Divisione Naturæ*," which was adjudged to the flames by Pope Honorius III., and its possessors excommunicated, establishes that none of the Categories, except that of *Relation*, are in any case applicable to the Universal Being, God, and that only figuratively, or by Analogy.† And this with logical strictness; for how should either of the categoric Genera adequately apply to the *Absolutely*

* See our Introduction, p. 25; and Harris's "Philological Arrangements," p. 31 to 36, and Index.

† See Sharon Turner's "Hist. of the Anglo-Sax." vol. iii. p. 416.

Universal Being, except that alone of *Relation*, which comprehends them all?

595. To the Post-Predicaments Aristotle also superadded the Universal term CAUSE, involving all other categories, and variously distinguished it as *Material*, *Formal*, and *Final*, to which numberless others have been added; and in modern times this category of Cause has taken precedence of all other predicaments, and conducted to a fallacious scepticism, only resolvable through Analogy by the universal fact that *Cause consists in Concurrence*: for *Effect* being the correlative or Analogue of Cause, and an Agent and Patient being co-essential to every Effect, all *Cause becomes resolved into Action and Passion*, or re-action, which are the primary Analogical Correlatives of *Existence* and *Relation* universally, and as the foundation of all causes and categories, material, sensible, or intellectual.

596. Altogether it is evident that BEING and RELATION, or the absolute and the relative, are the only perfect *subjective universals or Categories*, comprehending all others; and they are necessary, universal, coequal, and correlative conditions of
 • knowledge, analogically demonstrated; and they coincide with the *objective philosophical universals*, EXISTENCE and KNOWLEDGE or *Insistence*, as it might be called; in the one, *Existence* or Being is the prime category, as in the other, *Insistence*,

Knowledge or Relation, by which they are connected, is.

597. This agreement of the objective and subjective systems extends also to the representative system; for the *Philological universals*, or first genera of words or signs, are the *Substantive* and the *Relative*, or attributive; and thus *words, thoughts, and things* coincide and concur categorically in all our knowledge.

598. And these Categories or Universals, *Being* and *Relation*, have coequal and corresponding *Ends or purpose*; which, again, coincide with our philosophical universals, and also with the first position of our philosophy, in which we define a system to be a united variety of parts or *principles*, co-ordinate or *related* to some end or *purpose*. With these, also, the subject, predicate or attribute, and conclusion, and the three terms, major, minor, and consequent of logic, correspond.

599. In what other manner these Categories comprehend the universe, has appeared also in our first chapter, together with the genera and species dependent upon them; namely, the *External*, or Physiological; the *Internal*, or Nouological; and the *Medial*, or Philological, &c.: nor is there any end to their coincidences.

600. Further, if *Quantity* be of material or external reference, *Quality*, of sensible or medial reference, and *Relation*, of intellectual, or internal reference, as before remarked, then do we also

agree with the Ancients in their subordinate categories; for *Time and Space* comprehend all external or material quantities, as *Position and Possession* do all medial or sensible qualities, and *Action and Passion* all internal or intellectual relations: and, notwithstanding the equivocalness of the ancient categories, this appropriation is so suitable and easy, that we may reasonably consider them as the relics of a more ancient and similar philosophy.

601. At all events, the true source and genealogy of the Categories have been unnoticed, and, as far as appears, were unknown to Aristotle himself, who is said to have borrowed them from Ocellus Lucanus, and Archytas the Tarentine; who, again, founded them upon the Decalogue of Pythagoras, called also the Table of Alemæon: and as Pythagoras drew his philosophy from the Egyptian and Eastern sages, and modern researches into the ancient literature of India and the East have disclosed doctrine consonant to the Categories, there is reason for referring them to a time and country more ancient and remote than Greece.

602. It is held to be contrary to logical rule to argue from one Category to another, and that Reason even fails altogether when we quit the category of any inquiry; but this is not entirely true, since one category contains others, and there is, in strictness, but one absolute Category—a single *Analogical Universal* only.

603. It is the same when we argue from one Species to another, and still more so in arguing from Genus to Genus under any Category, the relations becoming weaker and weaker as they become more remote; but still there is Analogy and true ground in each case, and throughout. This law of Logicians is therefore to be held with limitation, and it is still contrary to just argument to quit the Category unnecessarily, or to call in the remote instead of the immediate or near at hand; but it is perfectly lawful to strengthen the final judgment universally for perfect conviction.

SECTION IV.

604. Having thus shewn the necessary, universal, *analogical basis of all ratiocination*, and the manner in which these universals coincide with, and comprehend, the Categories upon which Aristotle rested the validity of the Syllogistic process (for the hypothetical and disjunctive syllogisms resolve into the categorical), we may proceed in our attempt to develop the instrumentality of the ANALOGISM, the fundamental organ of logic.

605. Since, then, all reasons are analogous relations (which are the sole matter, or substance of logic), and since correlatives demonstrate each other immediately, or by necessary inference, and imply equality or reciprocalness, *analogism concludes*

T

from the equal reasons or relations of things immediately and essentially, or from known relatives deduces their less known correlatives.

606. And as Universal Relations comprehend a subordination of Particular Relations, so the Universal Analogism comprehends a like subordination, both of which are unfolded by analysis. We therefore distinguish analogisms as *Universal* and *Particular*; and these, again, we divide into *single or simple*, and *general, plural or compound*. Such are the distinctions of the *Logical Analogism* founded on the immediate parities of Reason, as distinguished from the *Rhetorical or Philological Analogism*, which belongs to the remote Similitudes of nature and imagination, both however resolving into the same Universal Analogy.

607. As the premises upon which the first distinction of the Logical Analogism is framed are necessary and universal, and those of the second, or particular, may be in themselves arbitrary or granted, the first are *Categorical*, and the latter may be called *Hypothetical*; between which lies the popular or general analogism, which is Rhetorical and Philological, and concludes from parallel relations and similitudes: and this may be called *Disjunctive* and conjunctive.

608. In this the Analogism resembles the Syllogism, that it is either Categorical, Hypothetical, or Disjunctive; and it resembles the Syllogism herein, also, that the two latter of these, the

Hypothetical and Disjunctive, resolve into the first, or Categorical; and they both terminate in the identification of Relations, *i. e.* in *Analogy*.

609. And, in their application, the Categorical Analogism is *Theoretical*, and principal in Intellectual and Ethical science; the Hypothetical Analogism is *Practical*, and principal in Material and Physical science; and the Disjunctive Analogism is *Discursive*, and principal in Sensible and Æsthetical science, including the Philological and Rhetorical.

610. Further, the three Modes or Forms of the Analogical Organ are severally distinguishable into Analogisms of *Reason* and of *Fact*,—the first *à priori*, the latter *à posteriori*;—the one expressing the Relations of Active and Passive *Intellect*, the other the Affinities of Nature through *Sense*.

611. Thus the Primary triad of Colours is a categorical Fact *à posteriori*, and that of Sounds is another, whence may be analogized and inferred all the Relations of Chromatic and Harmonic Science; and, in like manner, every Science has its elementary categorial Fact or Reason, to which it entirely refers for its Relations, and whence it may be wholly deduced, and also connected with the whole of Science, logically or categorially, through Universal Analogy.

612. As the *Categorical Analogism* comprehends all *necessary relations*, *i. e.* relations of reason or of fact, traceable to universality, all necessary

relations, whether universal, general, or particular, *à priori* or *à posteriori*, are, by reference, categorical: so the *Hypothetical Analogism*, formed upon assumed, or *possible relations*, may be either universal, general, or special; and so also the *Disjunctive Analogism*, which argues from parity of reason, or *probable relations*, lies between the categorical and hypothetical analogisms, and may also be universal, general, or particular, for of these distinctions there are no definable limits.

613. Hence, we analogize *categorically* only on necessary relations; *hypothetically* on assumed, real, and probable, or conditional relations; and *disjunctively* and discursively upon parity of reason, or possibility of relations, or by similitude.

614. Yet Analogy, to become logically conclusive, must be between things of the same nature, or homogeneous: thus, for example, we cannot conclude through any real parity of reasons, from the doctrine of sounds produced by vibrations, that colours, or other objects of sense, are also produced by vibrations, because these things differ in nature or are heterogeneous: but parities of relation or analogy in things of the same genus are conclusive and certain.

615. Of these three forms, we will speak first of the two Logical Forms, the *Categorical, or theoretical Analogism*, and the *Hypothetical, or practical Analogism*; and finally, of the *Disjunctive, or discursive Analogism*, which is Philological

or Rhetorical. And these forms coincide with the matter of Logic or Propositions, the Categorical Analogism being *imperative*, the Hypothetical *inquisitive*, and the Disjunctive Analogism *assertive*.

SECTION V.

616. The CATEGORICAL or THEORETICAL ANALOGISM, is apodictical, and from two evident co-equal relations, or extremes, infers logically, or concludes their equal mean; and again, by analysis, it takes, of the concluded mean, two other equal extremes in evidence of another included mean relation—thus descending from the universal and general through the less general to the particular; and as the extremes and media in this process are in equal relation, or strictly analogous, and therefore reciprocal and simultaneous, either of the three terms may become extreme, or mean, to the others reciprocally. Hence this Analogism is a triple syllogism, comprehending three syllogisms, or particular conclusions, under a general and universal dependence, and is hence of irrefragable strength.

617. Thus, for example, the *Subject*, or that which perceives or sees, and the *Object*, or that which is perceived or seen, are equal terms, or extremes, and have the relation of antecedent and consequent reciprocally, and require no common

term to unite them in a judgment, but they imply or include the perception, or *View*, in which they concur; and these three,—the Subject, the Object, and the View, are co-essential, and by implication and logical inference, conclude each other reciprocally. They argue in a universally coincident circle, as major, minor, and consequent: they include, and therefore conclude, as irresistibly as the most perfect syllogism, each depending upon correct premises. And this may serve as example of the *simple universal analogism*. Further,—

618. Between the *Philosophic Mind*, as subject, and the *Philosophic Universe*, as object, lies *Philosophy or Science*, as View, in like reciprocal relation and coincidence. Take, now, either member or premiss, of this Analogism, for example, *Philosophy or Science*, and separate its extremes, namely *Physical* and *Intellectual Science*, between which, according to the same Universal Reason, or category of relation, lies *sensible science*, as a mean; and so on, again, with either of these terms and their subordinates, in search of particular knowledge, or Science.

619. And this is an example in the first stage of the *Compound, or plural Analogism*, which may sufficiently indicate the *Categorical or Universal Analogism*, in this place.

620. Of the power of this process in the establishment and rectification of principles, we have cited as an example the Analogism by which we

proved the duality of cause, primarily and universally, from effect, producing the necessary logical mean in triple Correlation and Analogy, thereby annulling the sceptical argument founded on the latency of the logical connective or third: for *all Cause consists in Concurrence of an AGENT and PATIENT united in EFFECT*, the three being coincident, simultancous, and reciprocal media to each other as extremes, in universally necessary connexion.

621. But all *Categorical Analogisms* are axiomatic, the fruitful source of Principles and of Science. The logical Principle, that *two things equal to the same third thing are equal to each other, and all of them reciprocal*, is an analogism of reason, as well as an axiom in mathematics, as complete in correlation as that of *father, mother, and offspring*, or the *Agent, Patient, and Effect* of Causation, or the *Subject, Object, and View* of sensible and mental vision. Each is a comprehending triad of extremes and mean, as conclusive as the most perfect syllogisms and convertible into them. Such analogical correlations are so simple as to be overlooked, or so evident as to be admitted without question, or are axioms worthy of authority on credit, although they appear inexplicable.

622. Analogism is a test of axioms by analysis, and whatever truth of fact is incapable of analysis is fundamental,—a first truth, and categorical foundation for Analogism by synthesis—which goes to the root of knowledge. Berkeley, with

irrefragable argument, shewed that, as it stands alone, we know nothing of an *External World of Matter*; and Hume by an easy effort turned the force of the argument against its author, and shewed that we have no better knowledge of the *Internal World of Mind or Spirit*, thereby setting up a scepticism that ousts the world altogether, and from which there is no escape but by the intervention of Analogism establishing a mean of necessary connexion of its three terms through universal relation or reason.

623. If, therefore, there is a medial world of knowledge, internal and external—of Mind, Matter, and Sense,—a categorical Analogism will be established on necessary reason. Beyond which the only shift of scepticism is to question the existence of knowledge, and therewith that also which knows and that which is known, which terminates all argument in Nihilism and absurdity. Thus the Philosophic Universe—the World of Knowledge—is essentially founded on Categorical Analogism, all following which is a chain of Logical Relations through Analogisms, universal, general, or particular, in agreement with reason and sense, so that Nature has neither deceived nor sported with our faculties.

624. Hence our *analysis of the Category of CAUSE* dissolves the dispute between the *Materialists* and *Idealists* by an *Analogism* also, the question at issue being, whether man knows and

understands *Passively* through his sensations and impressions, or *Actively*, through his imaginations, or the activity of his mind in producing ideas,—neither of which opinions is correct, nor entirely true or false ; for to all internal *Effect*,—Understanding and Knowledge—*Action* and *Passion* are as coessential or analogous as they are to external effects, and *we can know nothing but the relations and correlations* of anything.

625. Thus is Philosophy reconciled to Piety, which regards *materialism* with horror, as substituting a sensual and atheistic spontaneity and mechanism for the Being and operations of Wisdom and Deity, and points at *idealism* with derision as fantastic, contrary to revelation, and unworthy of God ; or Philosophy is forced for consistency into the more degrading errors of *scepticism*, or the *credulity* of those who, according to Solomon, want understanding and are in darkness.

626. It is only by *Analogism* that we can truly understand *Time* and *Space*, Time being the category of ACTION or activity, every act being generated in time, and being in the abstract nothing else ; Space, again, being the like category of PASSION or passivity, or, if admissible, spativity or receptivity, every passion being generated or received in space, and being, in the abstract, space only : they are thus the first principles of all effects and causes, and are concurrent in MOTION, their analogon. Thus Time, Space, and Motion, are

correlatives, inexplicable, nonexistent, and inconceivable apart; they are, therefore, *co-relations*, the foundation of the whole Mathesis or science of Measure, the science of Time being that of Number or *Arithmetic*, that of Space being *Geometry*, and that of Motion being *Mechanics*, the genera of innumerable sciences.*

627. By the same process that settles the question of Berkeley and Hume, may be decided the most inveterate controversies of philosophy and science. In Ethics, the celebrated principle of Hobbes, which has still its partisans and opponents, that *all men have original right to all things*, is a false extreme, the opposite extreme of which is *that no man has exclusive right to anything*, both of which are equally false extremes, the analogical mean of which is reciprocal, that *the universal right of men is a right of property in Partnership or Brotherhood*,† which is true, and decides the questions of controversy, while it establishes a new developement and true principle of Moral and Political Ethics.

628. Of all knowledge the mathematical, the most accurate and least disputed, is entirely based on first truths of Analogy. It has three correlative sciences, founded categorically on Number, Figure, and Motion, each commencing with an unanalysable

* See "Anal. Philos." vol. i. p. 250.

† This Christian principle is adverse to that fraternity and communism which has recently broken out in Europe.

first truth and axiom tested by Analogism. Arithmetic commences with a *Unit*, and the simplest formula $1 + 1 = 2 + 1 = 3$, &c., founding the science on pure consciousness, to which all arguments are referable for ultimate proof and logical validity; coinciding with which an especial computation has been called *Logistics*, and all logic is true mental computation, correlation, and Analogy, and Arithmetic is a purely analogical science. So, again, Geometry sets out from a like fundamental unanalysable position, the *Point*, which generates the *Line*, *Angle*, and *Curve*, the first truth analogically of another infinite science, the whole relations of which are traceable through Analogisms, as is the whole doctrine of Proportion, Arithmetical, Geometrical, and Harmonical, and dependent on original consciousness imperatively.*

629. On the same ground every science and every sense has its universal elementary principle and first truth traceable to primary consciousness through Analogism. Thus, in Visual Science, Truth and Light are coincident, and its first truth is Light and Shade, its elementary duad, whence its triad of colours is traceable through Categorical Analogism, and the infinite relations of Chromatic Science. It is the same in every Sense and throughout all Science.† Such is the true logical

* See our Analysis of these Sciences, "Anal. Phil." vol. i. p. 235; and Euclid's "Fifth Book."

† See our "Synopsis."

ground of knowledge and science, hitherto neglected or confounded with the arbitrary analogies of poetical and rhetorical similitude, affording spurious and amusing illustrations only.

630. Whatever Mind can conceive, Genius invent, or Art accomplish, has ever been divinely contrived, and all that philosophers and inventors have to do is to translate from the Book of Nature—the original of all originality. And although there has not hitherto been any Art or Science of Discovery established, it is a correct inference from the truth of these premises that the means of such art and science can be no other than the developement of the System of Nature, and this can be anticipated only through Universal Relation or *Analogy*: whence penetrating minds, struck even by incidental analogies, have been led to eminent discoveries.

631. That Analogism under Logical regulation has wider and more certain effect in conducting the inquiring mind to particular inventions and discoveries, that may have been overlooked for their obviousness or simplicity, we can in some measure testify by examples from our own experience. Opticians, from the time of Ptolemy to the present day, have regarded Optical Glasses, called Lenses, as of *Plane* and *Curved* figures only; but of these *Angular* figure is the analogical third, and of the three all possible lensie figures are composd; and although modern opticians have employed the

Angular Prism as an Optical Glass, it had not occurred to them to construct *Prismic or Angular Lenses*, to which we were led by reflecting on the forms and offices of the Prism and Lens, and by regarding Plane and Curved Lenses as Analogical Extremes, of which the Angular or Prismic Lens, or Lensic Prism, is the Logical and Geometrical Mean, affording a new instrument in Chromatic Optics, whereby we have raised a *Science of Colours from elements entirely Analogical*, and extensively illustrated and exemplified the Analogism.*

632. Again, the ancient Greek artists held that the figure of a well-formed man, with the limbs spread and extended, will be exactly included in a *Circle*, of which the centre will coincide with the navel, as in fig. 1; and Vitruvius, and other writers, have from the same source shewn that a like figure erect, with the arms extended, will be similarly included in a parallelogram, or *Square*, as in fig. 2. Conducted in the preceding manner by Analogism, and regarding these forms as extremes, of which there is a third, or mean, we

Fig. 1.



Fig. 2.



* See our "Chromatics," c. xiii. No. 352.

discover that the figure of a man similarly extended, taking the crown of the head, the palms of the hands, and the soles of the feet as the true and natural extremities, will be included accurately in an equilateral *Triangle*; thus extending the *Analogy* to the three figures which are the sole elementary forms of *Geometry*; and by trisecting this triangular plane, the principal divisions of the body will be found; and by further trisecting these sections, in like manner will be found the subordinate parts of the body, &c., thus affording a scheme which discloses a perfect *Canon of the Human Figure*: *e.g.*

Fig. 3.



633. Again: Archimedes was, it is said, especially delighted to have discovered that the *Sphere* and *Cylinder* were reciprocally of sesquialteral proportions. With similar satisfaction did the eminent Tacquet discover that the *Cone* coincided with them in like proportions and reciprocal ratios,—and their inquiries were enlarged by the celebrated Bishop Berkeley.* Analogism again steps in, and we are

* In his "Miscellanea Mathematica."

led to the further disclosure of the coincident proportions and correlation of the *Prism* with the three figures; but the *Cylinder*, the *Cone*, and the *Prism*, are the sole secondary elements of Geometrical figure, and the sphere is the reciprocal measure of the three: whereby the general question is carried throughout, universally, and may be extended to other theorems infinitely, demonstrating the Analogy of Geometrical figure universally. Of this coincidence the following figures denote the plan, 1; and elevation, 2.

Fig. 1.

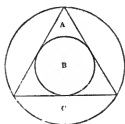


Fig. 2.



Attributing, however, the discoveries of these great Geometricians to the inspiration of Genius, while associating our consequent deductions therewith, we claim merely the application of a Logical mechanism suggested by their disclosures; yet hold that whatever is unknown and possible to man may be discovered and contrived through his assiduity and research, guided by an Analogism that will conduct him throughout the universe.

634. Our conviction is accordingly that the great questions which have wasted philosophical,

delectable, and religious speculations in hostility of sect, æsthesis and schism, have arisen from the maintenance of Absolute Extremes while overlooking their Analogical Media, and are to be resolved by the logical instrumentality of Analogism; such as the questions concerning Cause and Effect, Beauty and Deformity, Liberty and Necessity,—the nature of Wealth,—and whatever have divided Parties and Polemies: nor is there an opinion that cannot be tested by the touchstone of Analogism, which, however it may make Criticism unpalatable, will make it just, and open a new way to improvement.

635. Nor is it necessary we should confine our examples of the use of the Analogism to the highest objects of opinion and science, since it descends with complete effect through the refined inquiries of Taste and Sense to the trivial utilities of Art; of which we could supply many such instances as the following. Regarding the *Nail* and the *Screw* of the Joiner as Extremes, the one of which is driven by the percussion of the Point in a *Right Line*, the other forced by a *Circular* motion, it became apparent that there is between them a Mean, or *Angular* and diagonal form and motion, whence we were led by the suggestion of Analogism to twist a flat, square, or triangular Nail, whereby its edges were converted into *spiral threads*, and such Nails revolved, in manner of a Screw, while driven into wood by a hammer, so as not to be withdrawn.*

* This plan has been since patented, and applied to boat-building, &c.

636. Again, in a more extensively useful instance, we were desirous of expediting artificial Filtration of fluids;—looking therefore to the operations of nature, 1, by simple *gravitation in air*; 2, by negation, or *exhaustion of air*; 3, by impulsion, or *pressure of air*, as atmospheric extremes and mean in natural filtration, we were led to the contrivance of the PERCOLATOR, wherein, by *exhausting* the space of air beneath the filter, we could lay the weight of the atmosphere in any degree required on the filtering fluid; or by injecting air thereon to expedite the filtration by its elastic *pressure*, or by both combined, in a manner analogous to the operation of nature in springs, and in the animal economy, in which *respiration*, vascular *filtration*, and that *circulation* which immortalised the name of Harvey, are carried on. And this analogy of the Percolator has proved eminently useful, and fruitful of improvements in various arts, and a source of many patents.*

637. A great variety of other instances of the inventive and suggestive efficacy of Analogism might be adduced; but the chief function of this organ is *universal*, and that alone whereon *the interpretation* of all knowledge and science can be *established upon a single principle*, according to a system of universal correlation and consistency, as a foundation for all Logic; and this therefore we have attempted

* For sugar-refining, purifying water, in printing, paper-making, pharmacy, dyeing, and the dairy, &c.

in our "Outlines of Analogical Philosophy," and "Synopsis;" in which, whether we have succeeded in any degree or not, we may claim to have pointed out a way for its attainment, and indicated that unity of conception which is alone worthy of that Universal Being who has formed and sustains the Universe, and is *Unity* itself—the Fountain of all Reason and Truth—the Logos of all.

Such is the chief object of the Analogism, the general neglect of which method may serve as an excuse for our autological illustrations of its utility.

638. Every Natural and *Logical Analogism consists of two Extremes and a Mean, or Media*. In some cases this is obvious and applied, in which the Mean is real and principal, as that of a Mortgage to a Mortgagor and Mortgagee; but in most cases the Logical Mean is to be sought; and in either case *the three members of an Analogism are essential to complete inference and knowledge*.

639. There are cases of Analogism, however, in which the mean is apparent, and the extremes are obscure, remote or occult, as we have seen in the relation of *Cause and Effect*, the extremes of which are latent or concealed, being *Action* and *Passion*, the coessential extremes of this relation, coincident and hidden in the term *Cause*, on account of its correlation with *Effect*. And hence has arisen much misunderstanding throughout philosophy, wherein Effect has been referred to Cause as extremes without a mean, although Action and Re-

action, or Passion, are coessential to every Effect, and constitute its Cause: whence Hume, not perceiving the *mean*, denied their logical *connexion*.

640. As the Analogism, to be perfect, must consist of parts, members, or premises, which, taken together, contain neither more nor less than the whole of their subject; and, as it requires co-equal extremes in evidence of an equal mean, it is principally applicable to intellectual science and universals, in which these complete and necessary relations are principally found. And the highest and most important of all the applications of the universal form of the Analogism is that in which it rises to subjects purely intellectual and divine, to subjects purely ethical and theological—the spirit of man and the Spirit of God,—subjects concerning which the Analogism can alone afford satisfactory logical conclusions.

641. Yet the Analogism descends with proportionate degrees of evidence to the minutest particulars of nature and science, of which we have given extended examples synthetically in our “*Chromatics* :” the Analogism is, however, chiefly analytical. And as Generalogism, or *Induction*, is the artificial procedure toward theory or science synthetically, so is Analogism the true scientific procedure in the researches of practice, or art, analytically, and the readiest and most efficient means of invention: whence our next distinction of this Organ.

SECTION VI.

642. The HYPOTHETICAL, or PRACTICAL ANALOGISM, is an inquiry in which we assume two extremes, real or imagined, in search of a required mean, or particular. It differs from the Categorical Analogism in this, that its extremes or premises are not universal or necessary, but conditional or arbitrary, and it is applicable to all kinds of topics and subjects. In every such Analogism the Extremes must be limited to determine the analogical Mean. Thus, if the question be concerning the best literary composition, clearing the ground from pedantry and fashion, which disguise the Subject, the best words are those, 1st, which convey the Signification *best*, and, 2dly, most *agreeably*, as Extremes: but some writers think only on the Meaning in the choice of words, and they compose without Grace on one extreme, and others regard only the Agreeable, and these compose without Sense or Signification on the other. To *unite Grace with Sense* is therefore the perfection of Composition—its rational Analogic Mean.

643. The Hypothetical Analogism may be practically exemplified in the adjustment of proportions: for example, let us assume, or determine, the terms $\frac{4 A}{1 B}$ and $\frac{1 A}{4 B}$ in a chemical compound to be the

extremes of a required *mean*, or effect; then, in search of such a perfect mean, try the following,

Proportions —			
$\frac{4 A}{1 B}$	$\frac{2 A}{1 B}$	$\frac{1 A}{2 B}$	$\frac{1 A}{4 B}$
Approximate Extremes.			
New Media —			
$\frac{3 A}{2 B}$	$\frac{1 A}{1 B}$	$\frac{2 A}{3 B}$	

and so on to other media, if the particular sought be not yet attained.

644. If a more perfect individual or mean be required than either of the new media affords, proceed, in like manner, with the two nearest to it as new extremes to the mean, or particular sought, and so on till it be attained; or, if the required mean lie toward either of the original extremes, then pursue the same course with that and its approximate term; and so on to the particular or end required.

645. It is here evident that the *hypothetical*, or *practical Analogism*, treads upon the opposite limit of Induction or Generalogism; in further illustration of which, and of the practical application and advantages of this mode, suppose it be required to accomplish any new purpose, or improve any process of art, we first generalise or generalogise the particulars and means our knowledge of nature and art may afford toward such end, and assume

the most eminent means or process induced, as the basis of our analogical procedure, designated by A, fig. 1, &c.

Fig. 1.



We then vary the adopted process in its extremes and mean B B B, fig. 2, &c. The same with the most successful of these terms, setting apart the rest, as C C C, fig. 3. This, again, we analogise in like manner, and so on. The same with every particular of the process.

Fig. 2.



Fig. 3.



If we fail in every ramification of this branch, we return to our first position, and upon new ground pursue a similar course, A 2, fig. 4, and so on till we succeed in accomplishing our purpose.

Fig. 4.



646. Thus we may survey with accuracy the entire ground of our subject by an *inductive*

Analogy, wherein, knowing the bearings as we go, there is neither danger of running repeatedly over the same ground, nor of wandering in a labyrinth, as he does who operates at random; and if, in the search of a particular or individual in infinity, this procedure proves sometimes tedious, it is, notwithstanding, ultimately the shortest and surest, provided we take our ground according to the full breadth of our subject; and, that we may not waste our time and powers in the unnecessary breadth of our survey, demands knowledge concerning universals, and also, as in the Induction, experience with regard to particulars.

647. Thus also, Experience, and the processes of *Experiment*, are in all cases logical investigations, or *Tri-als*; for to *try* is to *tri*, or prove by a *third*, or comparative mean, any matter in question; just as all *Truth* is logical relation or agreement of words, propositions or things, and signifies *trow*-ed or *tri*-ed: *i. e.* proved or prolated by a *third*, mediant or measure: and thus natural etymology confirms the traditional.

648. Notwithstanding the practical Analogism resembles the Generalogism or Induction in the assemblage of its members or particulars, that is, in its matter, it is essentially different and distinguished therefrom in its form, which consists in *seeking a particular or individual, among a variety*; while, in every induction, a *general is*

predicated of or deduced from particulars: these modes are therefore antithetical, or opposed.

649. Nevertheless, this mode may reciprocate light with the method of Bacon, and especially on those parts of the "*Novum Organum*," of which he delivered the titles, but omitted the details, so far as they may be adequately understood: viz. 1. The Helps of Induction; 2. The Rectification of Induction; 3. The Method of varying Inquiries; 4. The Prerogative Natures for Inquiry; 5. The Limits of Inquiry; 6. The Reduction of Inquiries to Practice; 7. The Preliminaries to Inquiry; and 8. The Ascending and Descending Scale of Axioms, —commented on by Dr. Shaw; to all which subjects the Analogism may contribute and apply.

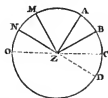
650. The Hypothetical Analogism will afford also perfect conclusions in the determination of mathematical ratios and analogous quantities or proportionals, which are justly considered by Barrow as "*drawn, not from any induction, but from a universal discursus*,"* without determining what process or discursus, although it is evident it is not syllogistical.

651. Of such, among other examples, and much to the purpose of our argument, he gives us the following:—"Let there be a circle whose centre is Z (fig. 5), and two angles at the centre, A Z B and M Z N, standing upon the arches A B and

* Math. Lectures, p. 394.

M N; let any multiple of the arch A B, suppose the triple A D, be assumed, and let Z D be connected. It appears, from the third element, that the angle A Z D is also triple the angle A Z B. Then let any multiple of the arch M N be taken, suppose the double M O, and let Z O be connected. In like manner it appears that the angle M Z O is double the angle M Z N. But if the angle A Z D exceed the angle M Z O, from what is demonstrated in the third element, the arch A D will also exceed the arch M O; and if that equal that, also this will equal this; and if a defect be there, also a defect will be here. Therefore it is shewn that the said condition agrees with these quantities by a certain *universal* [analogical] *demonstration*," i. e. by parity of reason, ratio or relation.

Fig. 5.



652. The like reasoning holds in numbers, motions, and in every homogeneous subject. Thus, in arithmetic, the rule of three, commonly called the golden rule, depends in all its variety upon this species of analogy, and its results or conclusions are, for the reasons given, logical and per-

fect ; indeed, the whole of arithmetic, inasmuch as it is a science of *ratio*, depends upon this mode.

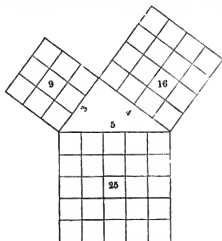
653. We may also demonstrate, through Analogism, that all Triangles and all Equi-angular and Right-lined Figures, whether Linear, Surficial, or Solid, are composed of and resolvable into like figures to infinity, as exemplified by a bisected Line, Triangle, Parallelogram, &c. : thus :



Thus, the harmonic parallelogram, often employed by architects for its pleasing proportions, of which the sides are to each other as the diagonal of a square to its sides, being bisected by a line parallel to its shortest side, each segment will be a similar figure, and if these segments be bisected in like manner, their halves will, from the same analogy, be similar rectangles to the original, and so on to infinity ; and their sides will be analogous proportionals. But the learned Barrow has shewn, that such proportionals are not properly from any Induction, but from a Universal Reason or Discursus, of which he perceived the logical want, and of which the Analogism is the form and organ.

654. That Geometry is Analogical, not only in its first principles, but in its demonstration, is widely apparent ; the science is, indeed, essentially Logical, and there cannot be a better illustration to

the eye and the mind of a perfectly constructed argument in each of the three modes, Analogical, Syllogistical, and Genealogical, than the celebrated forty-seventh Proposition of the first book of Euclid. That of every right-angled triangle, the square of the hypotenuse is of equal quantity to the square



of the other two sides. Thus there is a perfect reciprocal relation, or ratio of the sides, angles, and squares *Analogically*. Again, 9 is included in 16, as 16 is in 25, or as a Particular is contained in a General, and a General in the Universal *Syllogistically*; and, finally, 25 is induced from the particulars, 9 and 16, *Generalogically*. Harmonically they consist of 3 threes, 5 threes, 8 threes, and a temperamental unit.*

* See the whole Book v. of Euclid.

655. The conclusion from the agreement or identification of two things with each other, by reason of their agreement in some third thing, according to the logical maxim, variously repeated, "*Consentientia uni tertio, consentiunt inter se*," is strictly analogical, as we have shewn; and every inference drawn from such premises is conclusive to reason; and the three terms in every such case constitute an Analogism, being reciprocally identified in agreement.

656. All Comparisons are questions of Resemblance, Similitude, or Analogy, and all Judgments and Arguments are founded on and consist in Analogical Comparison. To find out the Logical agreement or Analogy by which two things may be Related, we Compare them with some Third thing with which they are in mutual Relation or Analogous; in doing which we Compare and Syllogize; whence the above logical maxim coincides with the mathematical axiom, that *things that are equal or unequal to a Third thing, are equal or unequal to one another: i. e.* that things that are Related or Analogous to a Third thing are similarly related or analogous to each other; and Locke correctly attributed all Reasoning to the Comparison of two ideas by the Medium of a Third.

657. A simple Fact is known through Sense, and can only be Reasoned about, or Judged of, by Comparison or Analogy with another, or others; therefore Facts are distinguished from Reasons, the

one belonging to Sense and Particulars *à posteriori*, the other to Intellect and Genera *à priori* ; whence all Facts are traceable to Reason through Universal Analogy. That the three angles of a triangle are equal to two right angles—that the angles of incidence and reflection are equal—and other axioms of Geometry and Physics, &c., are Analogical even as Facts.

658. Regarding, therefore, the same universal Analogy as established internally and externally—physically and logically ; and throughout Science, we thus analogised from the one to the other by conveying the two Colours of a compound hue separately into the sensorium, and thereby produced their intermediate third experimentally, 1st. By throwing them into the Visual organs from the Solar spectrum, apart but simultaneously ; and afterwards repeating the experiment with simple light through coloured glasses. By thus conducting *Yellow* light into one eye and *Blue* into the other, we induced a *Green* to the Mind ; and again, by varying the extreme Colours, we realised and generalogised, all the Thirds, Contrasts, and Unities, of Chromatic Science, through *Sensible Analogism*, in Logical and Physical Coincidence.

659. We might expatiate on the extent and variety of the practical Analogism, of which our applications in other places may serve as illustrations ; but our present design is not to particularise, but to distinguish the Analogism as a

universal mode : it should, however, be remarked, that the *hypothetical, or practical Analogism*, is a mode not so much of reason as of experience, and therefore its logical evidence is proportionately less perfect and less logically conclusive than that of the *categorical, or theoretical Analogism*, upon which it is founded, and which belongs primarily to reason, and concludes necessarily. Between these, as extremes, may be inferred an infinite analogical series, varying in degrees of evidence, and variously dependent on reason, and sense, or experience. Nevertheless, the premises of the Practical Analogism being unigenial, or the same in kind, its conclusions are of great logical force. Of the importance of this mode we have abundant evidence and illustration in the fifth and sixth books of Euclid, which are entirely grounded thereon.

SECTION VII.

DISCURSIVE ANALOGISM.

660. Finally, the DISJUNCTIVE OR DISCURSIVE ANALOGISM which lies between the Categorical and Hypothetical modes, argues from Parities and Similitudes, which it enunciates or asserts, and which are dependent on the original, systematic, universal Relations or Analogy of things.

661. The Discursive or rhetorical process is so common under the phrase of *reasoning by Analogy*, that it needs not an example ; and it is the mode in which the logic of Analogy has been alone recognised, and to which it has been almost exclusively confined ; being a form of ratioecination extremely popular, and of vast rhetorical use ; for the analogies and similitudes of things, owing to a latent sentiment, or consciousness, of universal relation, which belongs essentially to the mind, become delightful to the imagination, and flattering to the judgment which recognises them, when, in the same case, the induction would prove laborious, and the syllogism dry.

662. It has, however, been urged, that the discursive Analogism illustrates without proving ; but, since it depends originally upon universal relations, it proves in proportion to the intimaey of relation it discloses in the premises : hence this mode is conclusive when the relation of comparison, or analogy, lies in nature, and is sophistical, or illustrative only, when such natural relation is wanting. It is, accordingly, of greatest force when the subjects or premises compared are homogeneous, or lie near together in the system of things ; and it is proportionately of less force, or null, when the relations of its subjects lie more remotely, or not at all in nature, and authorise the negative maxim, *omne simile non est idem*. The Analogism is, therefore, only perfectly conclusive when the coin-

cidence it discloses can be traced to universality in things of the same nature.

663. This mode of Analogism includes the *Paradigm* of the Greeks, with every kind of *Example*, *Comparison*, *Simile*, *Metaphor*, and *Parable*, and every species of *Metonymy*, *Trope*, and *Figure*, each of which is significant through analogy of nature or relation; and the parable was the chief form of teaching adopted beautifully and effectively by the Saviour of mankind, whereby He brought eternal things home to the business and bosoms of His followers; and this with the most natural and rational propriety, for this mode affords a first step to the logical understanding ere it is trained and qualified for the strict operations and apodictical conclusions of reason. Hence also it afforded the logic and ornaments of the poets and inventors of *fables*, the first teachers of mankind through imagination, ere reason had established its authority.

664. With homogeneous and forcible analogy did Alfred the Great, in his paraphrase of Boetius, answer the question concerning *Free-will*, originally, naturally, and with sublime grandeur, as a monarch and a man, on the principle of human and divine *Dignity*; regarding it as contrary to the dignity of God to be served by *Slaves*, and that, therefore, He had made man *Free*. And, guided by this sublime paradigm and its analogy, Alfred constantly asserted the *Liberty of Man*, and con-

stituted his government and people *Free*; thereby confirming his own royal and philosophical greatness, and his claim to the gratitude of mankind.*

665. The Disjunctive Analogism, neither building immediately upon universal relations, as the Categorical Analogism does, nor borrowing its premises from induction of sense or experience, like the Hypothetical Analogism, but arguing from similitude, occupies the ground between the two latter modes, whence its vast application and extent; and hence the reason why it has been regarded as exclusively analogical. Lord Bacon's doctrine of *conformable instances* may serve as an illustration of this mode or form of Analogism,† which in following a triadic distribution resembles the Dialectic of Zeno Eleates, employed by Plato.

666. The most familiar illustration of the Logical Relations of Analogy in general may, perhaps, be taken from human pedigree or genealogy, which is perfect in father, mother, and offspring, is strict also in the first remove of uncle, aunt, and cousin, in both of which the mean of Logical and Natural Relation is apparent, as it is also in a second remove with an added mean, and so on in declining series to the remotest remove with multiplied media. If we seek the cross or collateral and conventional relations, analogy and affinity become obscure and complex in proportion to remoteness;

* See Sharon Turner's "Hist. Anglo-Sax." vol. iii. p. 64.

† See "Novum Organum," Part ii. sect. ii. aph. 27.

and although family likeness remains apparent, and resemblance extends even to a nation or a people, an entire Logical Pedigree requires in all cases a long demonstration; whence in remote relations of Persons and Things we content ourselves with Resemblances and Similarities in place of Logical Proofs and unbroken genealogies, and denote them by the rhetorical term *Analogy*, or likeness.

667. It is the same in the relations of things universally, which are strict and identical in their original parents or first principles and early offspring,—abound with Similitudes of Sense and Resemblances in their remotest Relations, which indicate, only, their genuine intermediate kindred and true universal Logical Analogy, through which they are connected as a family of families, or sciences, of which the pedigrees and parities, when truly unfolded, display a Universal System.

668. In such complication of Natural and Logical Relations, it is not astonishing that the understanding becomes confounded and lost to strict Logical Genealogy, the only adequate remedy for which is to retrace the System of Knowledge and Science from its origin; tracing individuals into families, and families home to the first parent,—or the whole through Analogy from its first principle and beginning.

669. It is from conviction of this universal Relation and Dependence that we rely on the uniformity of Nature and Providence, and conclude

with confidence that whatever has occurred under one order of circumstances will recur in all similar cases, and infer from Cause to Effect, and from Effect to Cause. It is hereby that men are determined in all the ordinary acts of life, and in preparing themselves for all its events. This Analogical dependence is the Logical basis of the Natural and Experimental sagacity by which they are chiefly governed; and although it sometimes disappoint expectation, it corrects their judgment, of which it is the source, and is of unbounded utility.

670. We judge of things present and past, both by Analogy and Inductions of experience, but we can have no other judgment of future things than entirely through *Analogical Inference*, which is also the chief instrument for the discovery of unknown truths, physical, sensible, and moral. For, having discovered identity of Relations in Individual things, we may rise thence to their more General Relations, and finally mount synthetically to the Categorical Relations of Universal Analogy of the whole; since the Identity of Relation, which is Truth in the Individuals, is Truth also in Generals and the Universal. Hence the Analogism, though principally Analytical, is also of Synthetical authority, in coincidence with the Generalogism or Induction.

671. Tycho Brahé, influenced by a common prejudice, cautioned Kepler against his fanciful

hypotheses, as he called those Harmonic Analogies which led to the discovery of the true planetary orbits, and verified the Copernican System. Following those pre-eminent Analogists, Kepler, Copernicus, and Pythagoras, it was also that the greatest of natural philosophers, Newton, adopted the above laws of Cause and Effect, and founded his sublime Astronomy on the Analogy of the phenomena of projection and gravitation with the Planetary Motions. If, therefore, the phenomena of External Nature may be thus satisfactorily explained by the remote relations of the Discursive Analogism; how much more capable must the intermediate and necessary Relation of the Categorical Analogism prove in the interpretation of the internal phenomena of the Mind and the entire Relations of the Universe.*

672. But Experiment is for External things, the ground *à posteriori* of Material Science; and is little capable of Intellectual Science, necessarily Internal and *à priori*, — founded on a first and given condition, — an irrefragable position or hypothesis, which cannot be attained Synthetically or by Induction, but only through Correlation or Analogy.

673. The *Discursive Analogism*, founded on Similitude or Resemblance, is a devious argument and concludes by preponderance. Thus, in the

* See Tatham on Truth, vol. i. p. 163.

Sculptures and Architecture of an unknown race in ancient Mexico, lately explored and illustrated by Messrs. Stephens and Catherwood, there are distinct resemblances of like works of two other ancient Peoples, the Egyptians and Hindoos, and a similarity of ornaments with those of two other Peoples respectively connected with the former, namely, the Grecian and Chinese, but preponderantly with the Hindoos and Chinese; we have Reason of Analogy therefore to infer some connexion between the ancient races of Hindostan and Mexico: and as there was authentic intercourse between ancient Egypt and Hindostan, we have augmented Analogy and Reason for concluding the unity of relation anciently among all these peoples, amounting to probability, but neither *Induction of fact*, perfect *Syllogism*, nor *Categorical Analogism*.

674. Yet the *Discursive Analogism* draws too much on imagination to afford perfect ratiocination, or conclusion beyond probability or possibility. If we allow, as we must, that the Earth is a Planet, the abode of rational beings progressively improving in knowledge; other planets may also have similar inhabitants of similar, more diversified, more advanced, or more eminent powers; whence, by a reverberating Reason, or propagation of Analogy, although Man have neither the knowledge nor power requisite for visiting other planets, it by no means follows that the inhabitants of the Earth may not be visited hereafter by Beings of super-human

powers from other Heavenly Bodies: nor would civilised men be less surprised and alarmed at such a visit, than the American Indians were at the visitation of Cortes or the visit of Columbus, nor even Atheists, if there be such monsters, unlikely to fall down and worship. Yet must we not infer the probability, nor hardly admit the possibility of such an issue, although we cannot deny this form of Analogy.

675. Of the three modes of *Analogism*, the *Categorical* infers from necessary, real, and identical Relations,—the *Hypothetical Analogism* concludes from assumed Relations of any Genus,—and the *Disjunctive or Discursive Analogism*, argues from one Category, Genus, Species, or Individual to another, or others, through remote, disjointed, real, or assumed Relations. It is apparent also, that these modes engage variously the different faculties of the Mind,—that the *Categorical* mode depends on the Rational faculty, while the *Discursive* engages the Imagination, either literally, metaphorically, or mystically; whence the common reasoning by Analogy frequently misleads the judgment: and although it is often extremely ingenious, it has, by confounding relations, brought discredit on analogical reasoning in general, and frustrated the disclosure and introduction of its genuine and strictly logical modes into science.

676. Having thus briefly distinguished the primary forms and regulation of the Analogism,

we might subdivide these as variously as the other modes have been by logicians. It is, however, highly expedient in the commencement of every science and every discipline, to preserve simplicity, and, regarding all arbitrary, remote, irrelative, and trivial distinctions, as subversive of science, to employ such only as are founded on nature and universal analogy : otherwise

“ This *fierce Abridgement*
Hath to it circumstantial *branches*, which
Distinction should be rich in.”—*Cymbeline*.

We proceed, in the next place, to a brief analysis of the Syllogism, already more than amply detailed in the justly celebrated “ Analytics ” of Aristotle, and the commentaries and compilations of other logicians.

•

~~~~~

PART III.

~~~~~

MODERN

AND

SCHOLASTIC LOGIC,

&c.

MODERN AND SCHOLASTIC LOGIC.

CHAPTER I.

SECT. I.

INTRODUCTION.

677. HAVING, in the preceding part, sketched our outline of the Analogism, as the initiate Organ of Logic, we proceed to give brief analyses of the Organs of Aristotle and Bacon as dependent thereon, and as the essentials of an entire system, of which Logic has been hitherto deficient; whence, in a great measure, has arisen the neglect and failure of this most fundamental and important of all the Disciplines, notwithstanding the zeal and tenacity with which it has been maintained in our schools, in its primitive form, without prospect of advancement, much less of entire renovation or completion; whence the Baconian Logic has remained *Extra-scholastic*, while that of Aristotle

has obtained exclusively the appellation of *Scholastic*: into which latter we proceed to inquire briefly, and to analyse analogically.

678. Aristotle distributed all Knowledge or Philosophy into Physics and Metaphysics, which latter has three functions, which he distinguished as *Practic*, *Poetic*, and *Theoretic*, having three objects, Material, Sensible, and Intellectual, and three ends, Good, Harmony or Beauty, and Truth. The third, or THEORETIC, he again distributed, according to Analogy, into three Genera, *Physic*, *Mathematic*, and *Theologic*.*

679. From the middle or *Mathematic Genus*, Aristotle suspended the SYLLOGISM, or summing, as the Logic of Demonstration, but he erred in making it universal, to the exclusion of the other methods; whence Bacon attached Induction, or GENERALOGISM, to the *Physical Genus*, leaving the *Theologic or Ethic Genus*, to which the ANALOGISM is appropriate, unoccupied, although it is specially fundamental, and a Universal Logic, and consigning Theology to Divines.†

680. Aristotle's LOGIC‡ makes Demonstration§ consist of *Syllogism*, || *Proposition*, ¶ and *Terms*.••

* Aristotle, "Metaph." lib. vi. cap. 1.

† Aug. Scient. Table, &c.

‡ See Ammonius's "Treat. on the Categories," pp. 15-17.

§ Treated of in his "Latter Analytics."

|| In his "Prior Analytics."

¶ In his "Interpretations."

•• In his "Categories."

Its plan is, 1. *Objective* or Material; and, 2. *Subjective* or Formal. As Material, it includes, 1. *Predicaments*, or simple Notions; 2. *Propositions*, or complex Terms; and, 3. *Syllogisms*, or compound Propositions. As Formal, it includes, 1. *Definition* for clear Apprehension, *Division* for clear Distinction, and *Syllogism* for clear Conclusion; and, finally, *Method* to regulate the whole.

681. Such is also the general scheme of Logic which Science has retained to this day, with little alteration, or improvement of the Matter and Method of Aristotle's ORGANON; wherein he constructed a partial whole of the Syllogistic Logic from the imperfect use of the instrument by his predecessors; as they had employed it in Demonstrations from the Mathematical School of Pythagoras, who established Axioms of Quantity on behalf of the Mathematics, and the other prime Genera or Categories and Universals, without which there could be no Syllogism. Such Genera and Universals are derived from Generalogism and Analogism; and as *Analogism* is the Logic of Universals, descending to Particulars, and *Generalogism* is the Logic of Particulars ascending to Generals, so *Syllogism*, uniting Particular and Universal by means of Genera, is the Logic of Generals or Media, and therefore lies between the two other Modes.

682. Thus things of greatest importance, as

Aristotle has remarked, arise commonly from small beginnings: such was the course of Syllogism till established fully by himself, and such that of Induction till the time of Bacon; and that such also will be that of Analogism, ere that and Logic become established on a solid basis, as an entire Whole, we cannot doubt; but it will not be long delayed when society and the learned are prepared for its reception.

683. As the triple distribution of the Theoretic of Aristotle into *Physic*, *Mathematic*, and *Theology*, coincides with the general distribution of the Greek Philosophy into *Physics*, *Logic*, and *Ethics*, so are the three LOGICAL ORGANS conformable to the like arrangement; viz. the *Induction* to Physics, the *Syllogism* to Mathematics, and the *Analogism* to Metaphysics, including Ethics and all purely intellectual Philosophy: if, therefore, we rank these organs accordingly, the Analogism will be of as much more importance than the Induction and Syllogism, as Ethics are than Physics and the Mathematics; and although last to take its place among the logical organs, is every way entitled to precedence.

684. In proceeding to treat of the Syllogism our object is not to teach the Syllogistic Logic as a distinct science, to which there are already sufficient helps, but to analyse and place it on its analogical foundation, in connexion with the whole of Logic as

the counterpart of Philosophy. Of the minor parts of the Syllogistic Logic we have already treated in a preceding part, in subordination to our general plan of Logic; it remains only therefore that we treat briefly of the Syllogism itself.

685. Our intention, in this outline of the Syllogistic Organ, being to attain its true estimate, and to illustrate its *Principles*, without especial reference to *Practical Logic*, to which, nevertheless, they are the most essential aids and corrections, we need not enter minutely into the technical distinctions of the Syllogistic Art, but refer the practical inquirer to the works of its Great Originator, and to the best preparative for its study with which we are acquainted, in the "*Artis Logicæ Rudimenta*, with Illustrative Observations."

SECTION II.

SYLLOGISM.

686. THE SYLLOGISM, or middle process of Logic, *demonstrates hidden or remote relations, by a mean or medium common to them as extremes*; or, in other words, it shews that some *particular* is comprehended in some *universal*, because it is comprehended in some *general*, or medium, which is also comprehended in the same universal; as two things related to some third thing must also

be *analogously* related to each other : or, quantitatively, as fractions are contained in any integer by the media of the units which compose it.

687. Accordingly, every perfect syllogism consists of three members, which logicians distinguish by the terms major, minor, and middle, which three terms [a, b, c] are interchanged in pairs, in the three propositions of every syllogism.

688. For example, we may conclude syllogistically that the great Aristotle was fallible, thus :

Major	—All men [b] are <i>Fallible</i> [a],—Universal extreme,
Minor	—Aristotle [c] was a <i>Man</i> [b],—General medium,
Consequent	— <i>Aristotle</i> [c] was <i>Fallible</i> [a],—Particular extreme.

Or, what [b] is, is [a] ; and what [c] is, is [b] ; therefore what [c] is, is [a] also ; whence [a, b, c.] are identified, or collected under the same universal.

689. The *predicate* of the conclusion, or consequent [fallible, a], is denominated the major, or universal term ; the *subject* of the conclusion [Aristotle, c] is the minor or particular term ; and the *middle, or general term* [man, b], connects the major and minor in the consequent, or conclusion.

690. The *major proposition* is so called because it contains the major term ; and the *minor proposition* is so called because it contains the minor term. Some ambiguity arises hence, because *the middle term and the middle proposition are not usually coincident* : we consider it preferable, therefore, to distinguish terms and propositions respectively as *universal, general, or particular* :

more especially so, because any error in the argument depends upon the irrelation of these, and becomes immediately apparent in reference to them.

691. The consequent of the above syllogism may be concluded of all the particulars and media comprehended under its universal proposition, according to the axiom, that whatever is affirmed or denied of the genus may be affirmed or denied of its species and individuals also. Thus :

{ Universal	{	<i>All men are fallible,</i>
		<i>Philosophers are men,</i>
{ General.....	{	<i>Philosophers are fallible,</i>
		<i>The Peripatetics are philosophers,</i>
{ Particular	{	<i>The Peripatetics are fallible,</i>
		<i>Aristotle was a Peripatetic,</i>
		<i>Aristotle was fallible.</i>

The above is an example of the parenthetical or *compound syllogism*, or variously as the *prosyllogism*, *episyllogism*, and *sorites*, as the former is of the *simple syllogism*.

692. The *elliptical syllogism*, or *enthymeme*, is that in which either the universal term or the medium is implied, though not expressed: as, for example,

*Since all men are fallible,
Aristotle was fallible.*

There are thus in every syllogism three propositions, enunciations or judgments; a universal, a general, and a particular, expressed or understood;

and each of these propositions is in like manner constituted of three terms, or conceptions of relation, similar to the above, and called the *Subject*, *Predicate*, and *Copula*. For example :

Subject, — *all men* — universal ;
 Copula, — *are* — general ;
 Predicate, — *fallible* — particular :—

the same of the others also.

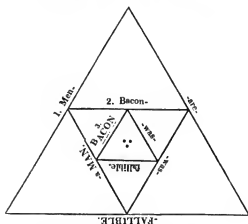
693. That which is true *universally* is true also of the Genera—that which is true *generically* is true also of its Species—that which is true *specifically* is true also of its Individuals. The greater in each case is the *Major* to the Lesser or *Minor* under it, and consequently the Least may be *concluded* of the greatest by medium of the Minor. Thus, in the Compound Syllogism preceding, universally, All men are Fallible, *Major* ; Generically, Philosophers are Men, *Major* also ; Specifically, Peripatetics are Philosophers, *Minor* ; Individually, Aristotle, the Peripatetic Philosopher, is Fallible, *Consequent* ; however many Media.

Syllogism, therefore, cannot properly be called Deduction, or taking from, for we do not draw the Conclusion from the Major and Minor, but infer it through them by a universal Colligation or Subsumption. Deduction applies in any other sense to all the modes.

694. If we descend the last step of logical analysis—that is, to the analysis of *words* or conceptions which constitute the *propositions* of which the

syllogism is constructed, or, in other words, to the *definition of terms*—we must also disclose their *particular* reference to the *general* and *universal*; or what (in the language of Plato, Aristotle, and the Logicians) is the same thing, we must determine their *genus* and *specific difference* respectively. And, finally, descending to the *signification* of individual Words, these also vary in each as of *Universal*, *General*, or *Particular* signification, upon which their logical power and value depend.

695. According to this analysis of the Syllogism, it is an *argument* which consists of three *propositions*, each composed of three words or *terms*, as distributed on the three sides of the three inscribed triangles of the following diagram :



1. Men are FALLIBLE,—*universal*;
2. Bacon was a MAN,—*general*;
3. BACON was fallible,—*particular*.

And thus all thought, logically analysed, is essentially triadic.

696. Hence the syllogism is a *compound proposition*, or judgment, in which the *particular* is included in the *general*, and both these together are included in the *universal*; which accords with Aristotle's *Dictum de omni et nullo*, according to which what is predicated of a class universally may be predicated also of everything comprehended therein. Or, more technically, whatever is predicated of a distributed or *universal* term, may be predicated of all under it. And we have here traced the syllogism to its elements, which are terms and propositions logically, as we before ascended to it from their elements philologically; the only difference here is, that that which was a *name* or a proposition with respect to words, is a *term* or a judgment with regard to thoughts. The proposition and the syllogism both denote relation, or necessary analogy; the proposition or judgment being a sentence which expresses a simple relation between at least two words or terms, as a syllogism is the expression of the compound relations among terms and propositions, nor can we otherwise infer one thing of or from another or others than through comparison, *i. e.* Analogy.

697. The above is the sole principle of the *Syllogism*; and to it each of the *three Figures* and their *modes*, into which syllogisms are distributed, are reducible; the variety of the figures depends

upon the transposition of the subject, predicate, and medium, which are the three essential terms of the syllogism, as they are also of the simple proposition.

698. It follows from this analysis of the Syllogism, and the universal law on which it is founded, 1. that no Particular inference, or conclusion, can be obtained unless there be a General or Generical term including it in the Premises ; 2. that no General conclusion can be inferred truly unless there be, in like manner, a Universal Premis ; nor, 3. can there be a Universal conclusion unless the Premises be entirely Universal ; in which case the Syllogism becomes an *Analogism* ; *e. g.*

Of whatever we know we are Conscious ;
 Whatever we are Conscious of Exists ;
 Whatever we Know Exists.

But the Premises may be reciprocally asserted, and are therefore *Analogical*, and Universal.

699. All the rules of Syllogizing, and the whole structure of artificial Logic are subject and reducible to the above law, and an attention to the clear relation of Universal, General, and Particular or Individual, will render needless all the regulation of Distribution of Terms, and other complicated machinery with which Practical Logic is overlaid ; it cannot, therefore, be too often or variously repeated and inculcated.

700. Finally, in every mode and figure of the Syllogism there are, expressed or implied, essentially

two terms or extremes with a third, mean, or middle term of comparison in equal, i. e. analogical, relation to both; and there can be no syllogistic inference, or final conclusion, unless one of the terms be universal, and ultimately categorical; which we have seen has a purely analogical basis.

701. The *simple proposition*, or judgment, is also distinguishable into figures and modes, according to the manner of its including the subject in the predicate, or of excluding it from the predicate, as displayed in most treatises on Logic. On the other extreme, the *compound syllogism*, prosyllogism, or sorites, might also be similarly distinguished; and these are the three members of discourse.

702. Hence, the three *figures* and their *modes* consist only of the several possible interchanges of the three terms and their propositions; and this is common to them all, that the minor and major terms, though variously excepted in the premises, are posited uniformly in the conclusion: all of which is very mechanical, and of greater curiosity than use, except in the way of illustration of the analogy of Reason, and the exercise of the logical faculty.

703. And this variety of distinctions in propositions and syllogisms is of very little either theoretical or practical importance, and resolves wholly into the analogical principle of comprehension, subsumption, or inclusion in the premises, upon which

all ratiocination is founded ; for the truth of a proposition, syllogism, or train of reasoning, depends upon the subordination of relations in the subject and predicate throughout.

704. The principle of comprehension or *inclusion* and *exclusion*, is the same in effect as the *Dictum de Omni et Nullo*, given as the principle of the first Figure, and is that also by extension of the other Figures, whence arises the power of reducing the other figures to the first form of which they are only more or less compounded. A correct understanding of this principle will afford a sufficient test for any argument, in which the first inquiry is the real question, distinguished by its logical *subject* or subjects, *predicate* or predicates, and *middle term* or terms, and will shew whether they are duly subsumpted or included, so as to afford a cogent and perspicuous conclusion, or the want of it.

705. To perform this syllogistically requires an acquaintance with Technical Logic and some exercise in its discipline, but by a knowledge of this principle or rule alone we may form a correct judgment of the validity, invalidity, or degree of value in every argument, whether it belong to the Syllogism, Analogism, or Generalogism. As, however, Analogism is the logic principally of *thought*, and Generalogism is that of *things*, so Syllogism is the logic principally of *words and signs*, and is therefore dialectical and discursive ; hence its philo-

logical, rhetorical, and grammatical alliances, as the middle member of discourse ; and hence, also, its mathematical connexion.

706. Since the syllogism is no further stable and conclusive than are its premises, we may go on questioning the premises, and the premises of the premises, till we arrive at that which is absolutely *primitive or universal*—the because, relation, or reason of the whole ; and if such universal basis is not to be found for the premises, the conclusion falls of course, and the syllogism becomes a *sophism*. Or, to speak as a logician, the fallacy of a syllogism is generally in the universal, or major proposition ; for if it be either in the minor, or middle proposition, it is easily detected.

707. As the Syllogism is a form of Logic between the Analogism and Induction, so have these modes their intermedia, partaking of each other through Analogy, although they have been usually regarded as irregular Syllogisms. Such is the *Sorites*, which subsumpts many Particulars and Media under a Universal ; and the Induction itself is an endless *Sorites*. And on the other hand the *Enthymeme* is a Syllogism of which one of the premises is suppressed, the Conclusion being evident through necessary relation or Analogism. Thus of this *Enthymeme*,—a Father is the benefactor of his Son ; therefore a Son owes duty to his Father : because Duty is due to all Benefactors, which universal major premis is suppressed, and the relation

between duty and benefit—Father and Son, is Necessary and *Analogical*. And of the *Sorites*,—all Flowers are Beautiful—[the Rose, the Tulip, the Jasmine, the Lily, &c. are Flowers],—therefore the Rose, &c. [each and all] are beautiful—by *Induction* or Generalogism.

708. It has been questioned whether every Syllogism is not sophistical, under the class of *petitio principii*, since it takes that for granted in the universal which is to be proved in the particular. Hence so long as the true universals upon which all syllogistic conclusions depend are wanted, will the science of syllogism combat with nearly equal force in favour of truth or falsehood. To establish these is the office of philosophy, and was the aim of Aristotle in his treatise on the “Categories,” of which we have already shewn the relations and dependence in another place; the analytical table of which, with our synoptic table, may serve as illustrations of the prosyllogism in extended forms.

709. Syllogisms are not only divided into the three *figures** and their many *modes*, and into perfect Syllogisms, Enthymemes, and Sorites; they are also distinguished as categorical, hypothetical, and disjunctive. They are yet more eminently distinguished as affirmative and negative;† between which

* Aristotle admits only *three* figures; Galen added a fourth, which other logicians, again, have disputed.

† These terms are relative and convertible; for that which affirms implies a negation, and that which denies affirms; *relation* is therefore concurrent with *affirmation* and *negation*.

is the relative, which subdivide into particular and universal; to which, for completeness, should be added the general:* which three latter are denoted by the articles or signs, *one, some, all*. There are yet other distinctions; into all which we need not enter, since it is of practical reference only, and amply unfolded in the "Organon" of Aristotle, and the works of other logicians.

710. We have thus indicated the general and distinct nature of the Syllogism, and rapidly trodden back the synthetical path of the Stagyrte; who treats first of *Terms*, in his treatise on the "Categories"—then of *Propositions*, enunciations, or judgments, in his "Book of Interpretations"—and, thirdly, of *Syllogisms*, in his "Analytics," to which we refer.

711. Yet the synthetical plan, however necessary and well suited to the design of Aristotle as a practical discipline, is always obscure in point of doctrine; and though it may conduct upon solid ground, it leads us, notwithstanding, in the dark. Analysis, on the contrary, encompasses and en-

* The terms, particular, general, and universal, have been strangely confounded; *Particular* (which properly expresses an individual part) having been employed to denote also a general or comprehending nature; and the term *general* (properly signifying a united plurality, or that which comprehends several, or many particulars or individuals) having been used to express *all-comprehendingness, or universality*; which, again, has been employed to express any general unity—a corruption to which these terms have been subject, in common with other correlatives.

lightens its whole subject, and is the true doctrinal method.

712. As universals can alone be proved *analogically* (for universal by induction is impracticable, if not impossible, and it cannot be concluded syllogistically), and as particulars belong to *generalization* or induction, *sylogism* lies between the other two modes in equal dependence upon them; accordingly, the validity of the foregoing syllogisms depends upon an ultimate analogism, proving the major—that all men are fallible;* and an induction, proving the minor—that philosophers are men: and if such basis is wanted to either, the conclusion falls of course.

713. The propositions of which the syllogism is composed partake of the same relations, depending equally upon induction or experience, and analogism or reason; but Aristotle, regarding syllogism and induction as opposites in ratiocination, overlooked the analogism as the extreme opposed to induction, and syllogism as their mean. See his “Prior Analytics.”

714. Now, there are three degrees of conviction, or mental satisfaction, through, 1. *possibility*, 2. *probability*, and, 3. *necessity or certainty*; the

* Men are fallible, inasmuch as they are capable of proceeding contrarily to the true *reasons or relations* of things; they would otherwise be *infallible*. The predicate fallibility belongs, therefore, to the universal predicament or category *relation*, which is proved by *analogism*.

first and last of which are extremes without remission; and the second is their mean, of which the degrees are indefinite. A thing is possible, or it is nothing; and that which we call necessary is irrefragably so, or it is null.

715. The Syllogism, then, as a mode of ratiocination depending on premises which require proof, appears, even when most perfect, to fall short of necessity or certainty, while it proves, in general, beyond mere possibility; its evidence lies, therefore, in the various degrees of probability between the extremes of possibility and certainty.

716. To the foregoing Rules of Illation or Logical Conclusion may be added the following, which coincide in the same Universal Reason and application, although adduced principally in regard to the Syllogism.

(1.) No Term or Signification can be more extensive in the Conclusion than in the Premis.

(2.) Two Things or Propositions compared, which agree with a third, agree also with, and may be affirmed of each other.

(3.) Two Things or Propositions, of which one agrees, and the other disagrees, with a third, will disagree with, and may be denied of, each other.

(4.) Nothing can be inferred or concluded from two Negative Terms, or Propositions.

(5.) There can be no agreement of things compared but through Analogy.

717. Many other rules are to be found in

works of Logic, but they are either evident to common sense, or resolve into the foregoing, and do but burthen attention superfluously. Such especially are those for the formation of Syllogisms in figure and mode, which, though held of much importance, are resolvable into the Rule of Analogy, whereby the Particular is contained in the General, and both are included in the Universal; whence the Particular inferred in the Conclusion must be contained in one Premis, and shewn to be so contained by the other. And both the Proof and Computation of syllogistic Conclusions, as of all Logical Illation and Inference, depend simply on being contained, included, or not included in the Premises. Nothing can render the triflingness, if not uselessness, of most of the distinctions, divisions, and rules of common Logic more apparent than the absurdity of the examples by which they are usually illustrated. Such may, however, afford exercise for minds that require it. Our object is to investigate Principles only.

SECTION III.

718. We have here traced the Syllogism in a subjective, or logical view, to the first category, RELATION; and Digby has performed the same with so much perspicuity in an objective, or philosophical view, from the correlative category, Ex-

ISTENCE or being, which is cognised by Reason as relation, that we will subjoin an abstract of his doctrine.*

719. The notion of *Being or Existence*, is of all the most universal, the simplest, and most deeply rooted in man; whence it is evident that the conjunction of signification, or *terms*, or union of apprehension by the means of being, is, in truth, an identification of them: for unity, being a negation of multiplicity, it follows that what is one is the same: and this identification is truly and naturally expressed, by saying that the one is the other.†

720. The most complete knowledge we can have of anything, is of such *propositions* as in the schools are called identical; as if one should say, John is John, or, a man is a man. In these we may observe, that evidence of truth arises out of the plain identification of the extremes that are affirmed of each other.

721. This Identification is, in fact, the Principle of Arithmetic, the most strictly logical of the sciences: whence, conversely, Logic is intellectual computation, a science of Calculation, or Summing according to Rules. Thus when, by Addition or Multiplication, we assert, that *twice one is two*, we have but proposed the logical Identity that *two is two*, by a universal affirmation; and when, by

* Treat. "Body and Soul." Paris, fol. ed. p. 366.

† Sydenham's "Plato." Banquet. p. 212, N. 186.

Subtraction or Division, we separate these Extremes, we have done the same arithmetically and logically by Universal Negation. Thus logical certainty is a true calculation, of which the Principle is the Analogy, Relation, or Identity here denoted.

722. Now, affirmative propositions do, by their form, import an identification of their extremes (for they all agree in saying the one is the other, or this is that); yet they are not all alike in the evidence of their identification, for in some it shews itself plainly, without needing help, as in all truisms, and such identical sayings we just now gave for examples; others require a course, or discourse, somewhat further about to prove the analogy or identification of their extremes.

723. Now, the scope of such *Discourse*, or Argument, is to compare such propositions to some third thing with which each of them apart is identified; since those which agree with the same thing must also agree with each other.

724. When identity between two or more things presents itself to our understanding, it produces knowledge (or acknowledgment) in the mind; whence it is manifest that the same power, or mind, which in a single apprehension, or term, is possessed with the entity or unity of it, is that very power, or mind, which, applied to an enunciation or proposition, knows, acknowledges, deems, or understands; since knowing is nothing else but

the recognising or apprehending of manifest identity or correlation in the extremes of a proposition.

725. The natural perfection of the mind or understanding is to be fraught with the whole universe; that is, to have the knowledge of all things that are (agreeably to the Platonic dogma, that the mind knows all things virtually). Truth residing only in the assents and judgments of the mind, wherewith it enriches itself with the rest of the world; and these being framed by the discovering of an identity between two things, which is expressed by affirming one of them of the other; it follows, that nothing can be true or false but where there is a composition of two extremes, made by one's being affirmed of the other; which is done only in enunciations or judgments, while single apprehensions assert nothing, and therefore settle no knowledge or relation in the mind.

726. Having shewn how two apprehensions* joined together make a judgment, the next thing will be to shew how three of those thoughts or judgments, well chosen and duly ordered, compose the most simple of perfect arguments, which logicians call a *Syllogism*; whose end and effect is to gain the knowledge of some relation before hidden and unknown.

* The *copula*, or *apprehension of union and relation*, is not enumerated here, because it is alike in all propositions. The three terms, or apprehensions, are nevertheless essential members of every proposition or judgment.

727. The means whereby this is accomplished is as follows: by the two first judgments we join the extremes of the proposition we desire to know to some third thing, and then, by observing that they are both one third thing, and that one can be but one, we come to discover that truly one of them is the other; so that the identity which first made an identical proposition to be known and acknowledged, and afterwards caused the like assent to those propositions whose identification was immediately apparent, now, by a short circuit, and bringing in of a third term, or medium, makes the two first—the identification of which was obscure and hidden while we looked upon the terms themselves—appear to be truly but one thing or relation.

728. The variously combining and disposing of these three terms in the two first propositions beget a variety in the syllogisms that are composed of them, which consists in this—that the assumed third term, to which the other two are interchangeably joined, is either said of them, or they are said of it; or it is said of one of them, and the other is said of it.

729. Neither is there any deeper mystery than this in the *three figures* so much talked of by logicians, which being brought into rules to help the memory in the ready use of this transposition of terms, if we spin our thoughts thereon into ever

so fine threads, and thereof weave too intricate webs, without reflecting on the solid ground and relations within ourselves whereon these rules are built, we may spend our time in trivial and useless subtilties, and at length confound and misapply our natural reason with a multitude of precepts drawn from artificial logic.

730. Under this primary threefold variety is another of greater extent, growing out of the various combinations of the three terms, as they are qualified by *affirmation* or *negation*, and by *universality* or *particularity*; for that unity which the two terms, whose identification is inquired after, must have by being joined with the third, becomes much varied by such applications. This affirmation and negation of Syllogisms resolves into the maxim mentioned by Cicero, according to whom the ancient logicians established "that in all propositions wherein *Yes* or *No* is required, one of them must be true,"* which Democritus attempted stupidly to answer, by denying the necessity of these terms.

731. From hence arises that multitude of kinds of syllogisms which logicians call *modes*; all of which we have thus particularly expressed, that we may observe how this great variety depends upon the sole principle of *identity and entity*; or, to express the same thing in other words, upon *universal*

* "Nat. Deo," I.

relation and existence ; for all logic depends, as we have shewn, subjectively upon the prime category *relation*, and objectively upon that of *existence*.

SECTION IV.

732. As ANALOGISM is the form of ratiocination principally applicable to the intellectual sciences and universals ; as the *generalogism* is, in like manner, to the material sciences and particulars ; so is *syllogism* the form principally applicable to the Mathematics and the sensible sciences, and partakes of their intermediate relation. The first of these forms belongs to the category of *relation* ; the second, to that of *quality* ; and the last, to that of *quantity* : and since quantity and quality are relations, analogism comprehends syllogism and generalogism fundamentally.

733. Syllogism is not, however, the sole mode or form of quantitative and mathematical reasoning, but only its principal organ, since we find examples of the other modes therein ; accordingly, the first principles of all the pure mathematical sciences are proved analogically, as are also harmonics and proportionals. Generalogism is also of frequent occurrence in mathematical questions, or the two latter modes may be compounded. Nor do we need any example to prove that the syllogism does not belong exclusively to the mathematics, but extends to

all intellectual and material subjects; in which respect it coincides with the other modes.

734. Some, indeed, found Logic altogether upon the mathematics, and call it the science of ratio, &c.; but in truth the mathematical disciplines draw their accuracy, and are deducible rather from ratio, or reason, and an accurate logic, applied to the homogeneous relations of *quantity*.

735. The mathematician *defines* his terms—establishes universal axioms and postulates (which are the *categories* of the mathematician)—constructs theorems and problems, or theoretical and practical *propositions*—and finally *demonstrates syllogistically*; all of which is exactly according to the scholastic or Aristotelian logic.

736. The clear light and truth of mathematical reasoning depends upon the homogeneity of its matter and the correctness of its premises; and other sciences are capable of the same precision, in proportion as they are divested of the *heterogeneous*; while the mathematics themselves lose their cogency when applied to subjects unconnected with, or remote from, the category of *Quantity*, to which they belong. Barrow has demonstrated this affinity of logic and the mathesis with a masterly mind, and he has been followed therein by Tschirnhausen and Wolfius in their logical works.

737. The want of perspicuity in subjects of argument is extremely increased by the equivocalness of words or terms, whereby they are taken in

different senses in the various members of a ratiocination ; so that there arises a real discordance with a seeming agreement between the premises and the conclusion, of which men either take advantage designedly, or are thereby betrayed into *sophisms*.

738. It has been shewn that the Syllogism is a mode and process intermediate to, and dependent on, Analogism and Generalogism as extremes ; and that the Analogism is the mode of intellectual and *ethical* science, as the Generalogism, or induction, is of material and *physical* science, to which the sensible or esthetical science is intermediate ; it may, therefore, be asked, if syllogism is the mode of esthetical science ?

739. We reply, that as induction or generalogism supplies the evidence and demonstration of physical and material things, and analogism does the same of ethical and intellectual things, according to our analogy ; the evidence and demonstration of esthetical things are *sensible*, and that in matters peculiar to sense, sensation must ultimately determine.

740. Thus, *colours* admit only of *ocular demonstration* : the relations of *sounds* require *auricular demonstration* ; and, in all matters of sense, feeling must demonstrate and determine, according to its own laws and relations. There is hence a Logic of sense or *esthesis*, which has its own universal and specific organs, laws, and regulations. Syl-

logism is not, therefore, appropriate peculiarly to esthetical or sensible demonstration, but is a middle mode, uniting the logical extremes of analogism and generalogism, or the universal and particular, and is thence peculiar to no department of science ; whence Aristotle appears justly to have regarded it as an exclusive and universal mode.

CHAPTER II.

GENERALOGISM, OR INDUCTION.

SECT. I.

INTRODUCTION.

741. It has happened, naturally, in the various progress of knowledge, that *philosophy* has taken the lead, and that the sister science of *logic* has generally received little countenance from philosophers, while it has been scorned by the rest of mankind. Not, indeed, that it could be altogether dispensed with by either; but, being used as an instrument, it has not been valued for itself; or, being austere and erroneous, it has lain in disrepute: while philosophy, unsupported by a correct logic, or misled by a false mode, has run into error and confusion.

742. Among the many circumstances and objections which have arrested the progress of logic, may be enumerated its apparent unprofitableness, since it supplies little positive knowledge—that it may be regarded as needless, since reasoning is a thing which lies so close to the nature of man that

he seems to possess it as a faculty without art—that it is not to be trusted, because it has been more employed to confound and fetter than to enlighten and free the understanding—more for the purposes of falsehood than of truth;—and, above all, that its difficulties as a science, its few honours, and its many failures, have deterred adventurers: so that, for every single system of logic promulgated, the world has received a hundred in philosophy. Nevertheless, the improvers of logic are among the greatest benefactors of mankind; since, by rendering men more reasonable, they render them more able, just, and happy.

743. Without logical regulation, men are, during one-half of their lives, slaves to their passions, and during the other half to their prejudices, mistaking license for liberty, or subjection for law; from which obliquities of youth and age reason alone can release them. Hence the man who is subjugated by his senses cannot be much better than a beast, nor he who is governed by his prejudices become much superior to a fool—alas! for him who is enslaved by both.

744. Men have deemed it necessary to the due exercise of their inferior faculties to educate or cultivate them; but, by a strange anomaly, they have come even to despise Logic, the tutor and trainer of reason, and put the self-sufficiency of the faculty in its place. The whole mistake does not, however, lie with reason, but partly with the imper-

fection of Logic, exemplified as it has been in treatises better qualified to entangle than to release reason, rendering it doubly incumbent on Logicians to repair or reproduce the instruments of a sound Logic.

745. Those who assert the sufficiency of Natural Logic, know also that men can walk and leap naturally, although not without practice; but they cannot march as soldiers, nor dance artificially, nor anyhow move gracefully or orderly in community, without regulation and discipline: and so it is, in precise analogy, with the use, practice, and discipline of natural and artificial reasoning in respect to Science and Art; whence the difference between a disciplined army or rational assembly, and a mob or a rout—or that between skilful sword and rifle-men, and combatants with sticks and stones, is not greater than that between the untaught reasoner and the well-qualified logician. There are, however, vicious extremes in all things; and in Logic he who totally disregards its art and discipline, and he who uses it only for parade and triumph, are equally in mistake and error; and so it is throughout science.

746. Although logic can neither furnish a man with faculties nor alone store the mind with information, it gives power and value by regulation to both, and is the touchstone of science and truth; nor is a valuable instrument to be rejected because it may have been unworthily or mischievously

employed. And if logic, for these reasons, has of all sciences been the least cultivated and the most abused, it is, nevertheless, of the first importance, and the more calls for support, since the fidelity of inference, the force of conviction, and the legitimacy of every conclusion, depend upon an accurate logic: it is, therefore, indispensable, not only throughout all science, but in all the great affairs of life. Nor ought the chief of all *disciplines*, and that which lies at the root of all intellectual culture, to be deemed itself unworthy of cultivation.

747. It must be admitted, nevertheless, that literature, without excepting even the great works of Aristotle and Bacon, has not hitherto produced a work deserving the title of a universal logic, since *Syllogism* is, for the most part, strictly conclusive only in the homogeneous relations of mathematical quantity, and fails almost entirely, or altogether, in physics and ethics; while the logic of induction, or *Generalogism*, however useful in natural philosophy and the common affairs of life, or however necessary in judicial investigations, is unfruitful in pure ethics and the mathematics.

748. It is at the bar, and in the senate, that this latter form of argument has been chiefly and necessarily resorted to, owing to the very heterogeneous nature of judicial evidence and affairs of state; but it was considered as too loose and inconclusive for the stricter purposes of science till

Bacon, influenced by the bent and practice of his profession, the habit of which he had carried with him into retirement, judiciously, and with discriminate sagacity, introduced the logic of the courts into physics, hoping thereby to build up the whole of philosophy, physiologically, upon the legal ground of a solid universal induction.

749. To Induction, accordingly, we are indebted for an important reform in the study of Nature or Physics, and for the means of adding greatly to the natural knowledge, numbers, and corporeal comforts of mankind: it has, notwithstanding, been either useless or injurious in morals, wherein induction is of no theoretical, and of little other practical use, than to teach us how to counteract the fraud of others, and become ourselves expediently honest; while by placing conviction on experience, and multiplying objects of power, pleasure, and contention, it loosens the bonds of society, and robs man of reliance on religion.

750. And although Induction brought reform into Physics, it did little for universal Philosophy, and as little toward universal Logic. The judicial bent of Lord Bacon's mind, and his habits, were unfavourable to an entire logical system by giving his judgment a bias from the uniform relations and concurrent testimony of nature, to the heterogeneous, diverse, and adverse evidence of men at variance with genuine universal logic, and adapted to specialise it as a science, and to found convic-

tion on loose circumstances, rather than on strict logical consequence ; and although induction has thus succeeded in physics and particulars, it has, from want of generic principles, effected nothing in subjects of taste or Esthetics, and has failed altogether in Ethics ; except in the practical judgments in law and legal equity, by skilfully unfolding the disguise in which cases are clothed with circumstances, a skill more dependent on experience than reason. In fact, therefore, the remark made by the great Harvey, who was Bacon's physician, "that he wrote philosophy like a lord chancellor,"* may be extended also to his logic. Yet Dr. Willis has justly observed, that "had Bacon written his '*Novum Organum*' from Harvey's work as a text, he would scarcely have expressed himself otherwise than he has done ;"† nor can a better example of Bacon's inductive process be cited than that of Harvey on the motion of the heart and blood in animals : nevertheless Harvey did not confine his logic to induction, but employed the Analogism with admirable taste and skill in his more abstruse inquiries.

751. Thus, while modern philosophers, by the aid and example of the great Verulam, have corrected the errors by which the ancients founded physics upon a basis entirely speculative, and have thereby wrought a great and obvious reform in

* Willis's "Life and Works of Harvey," p. 83.

† Id. p. 40.

every department of natural philosophy, they have themselves erred equally, and with an influence infinitely more mischievous, by consigning moral and intellectual science to induction ; so that, should a check not be put to its course, there is danger that empiricism may usurp the dominion of mind.

752. This impulse of induction was, undoubtedly, determined by the abuse of the syllogistic process during the middle ages, and the absurd contentions of polemics, properly enough termed wrangling, in which the strength of argument was made to consist in resistance of evidence and a fruitless logomachy ; and also by the vain attempts of philosophers to establish the speculative, as well as the experimental sciences, upon syllogism, the force of which lies principally in words and a connexion with philological science.

753. Yet has the logic of induction, coupled with a tasteless rhetoric, been hardly less abused in the courts of law, and in politics, than was that of the syllogism in the schools ; in both of which natural reason has been subjected to artifices more successfully employed in defending falsehood than in disclosing truth.

754. It is apparent, therefore, that in the most important concerns of moral and intellectual science, neither of the established *organs* suffice, and that they leave man without an authority for his judgment therein, or a rational guide for his conscience ;

whence the lamentable uncertainty and discordance which prevail in religion, morals, and metaphysics: upon which, perhaps, depends the too evident neglect of intellectual philosophy, and moral, political, and religious duty, notwithstanding our high state of civilisation, and advancement in the physical sciences and arts. The moral necessity of a true universal Logic will not, therefore, be disputed, the more especially since there is a *third organ* peculiarly suited to moral science, the basis of all true ratiocination, and hitherto untried by logicians.

755. To raise logic upon its basis by the instrumentality of this third organ, is the principal design of the present outline, however insufficient it may prove, or however little attention it is likely to receive, while literary taste lies in an opposite direction. But since fashion revolves with seasons, the time approaches in which this subject, and the philosophy connected therewith, will recover popularity. We do not hesitate, therefore, to claim for this outline the attention of those who do not measure by magnitude alone, nor estimate that by its fashion or finish only, the true value of which is intrinsic.

756. The principal mistake of logicians appears to have been that of leading us into the particulars and labyrinths of logic before they had mastered the general plan, or universal ground of the science. Aristotle, the father of logic, whose "*Organon*" is

undoubtedly one of the greatest efforts of human intellect, is not free from this error. His genius and subtilty are unquestionable ; but his readers require the powers and acuteness of the master to penetrate the mighty maze of thought into which his developements conduct, without having clearly demonstrated their foundation. Nor are we aware that any near approach has been made toward so desirable an end by either or all of the twelve thousand Commentaries which Patricius computes to have been written upon that work at the close of the sixteenth century—a fact alone sufficient to prove its insufficiency, no less than the interest and importance of the question.

757. Bacon, too, following his great prototype, in his "*Novum Organum*," has led us into intricacies without having well established the groundwork of his method. It has proved too often an impediment to the progress of science, when extensive works have been established by eminent men, prematurely, upon partial and imperfect foundations ; for such have been made standards to all future accomplishments, to question the authority of which, or to seek science upon other ground, has been stigmatised as unpardonable heresy : nor has it happened in such cases, till error has propagated itself into absurdity, that reforms have been accepted ; and such has been the impendent fate of Logic.

758. Seduced by the example of Aristotle,

Bacon ran his Logic into divisions and distinctions as intricate and numerous as those of the great "Organon," but his distribution was not so complete and exhaustive as that of the Stagyrte. The simplest forms and regulations are, however, of most importance in Logic for understanding and practice, and the diffusion and complication of cases can only be of puerile use for exercise and discipline; for logic being of boundless grasp and diversity, is especially obnoxious to confusion.

759. Bacon having treated of Induction in his "Novum Organum," independently of the syllogistic method, may have led to the opinion that he opposed these modes with intention to supplant the latter, and that he did not bring Induction in aid of the common logic. Nevertheless, his design appears, even from his title, to have been principally to introduce a new hand or instrument, which he meant, had he lived, to finish and attach to the body of Logic, whence the works of these great men are properly to be regarded as parts of a whole.

760. Plato, the master of Aristotle, employed the Logic of Induction, morally and metaphysically, on behalf of *intellectual images*,—*ἰδέαι*, or *ideas*—as Bacon employed the same instrument on behalf of *physical forms*; and although neither of these philosophers succeeded in establishing either their *ideas* or *forms*, which have nearly the same signification, both representing intellectual objects, yet

has the Logic of Induction proved infinitely more efficient from the hand of Bacon in Physics, than from that of Plato in Metaphysics, because it is the true *physical Organ*.

761. Aristotle, who saw this insufficiency of Plato's Dialectic, attempted to remedy it for all science by an instrument of his own, and substituted his Syllogistic Logic as a universal Organ, but which is, in strictness of reference, unsuited both to Physics and Metaphysics, and properly belongs to the Mathematical Disciplines wherein it originated. Nor did Ramus succeed any better in his attempt to connect the Dialectic of Plato with the Logic of Aristotle.

762. Attempts have been made to extend the *Forms* of Bacon, and to restore the *Ideas* of Plato, as keys to intellectual knowledge, but without success; and Logic is still deficient of an appropriate intellectual Organ, since the many modern attempts to found moral and metaphysical Sciences and Disciplines on Induction have also failed.

763. Yet cannot Logic, whatever its failures or misappliances, be dispensed with, nor cease to influence mankind, for reasoning is as natural to the mind as exercise is to the body; and since thought governs action, by some kind of logic must the practices of men be ever prompted; and as philosophy is governed by the prevailing mode of thought, and the *Syllogistic* art forged fetters for the mind, while the *Inductive* Logic that still pre-

vails has turned the mind downwards, and freed it even to licentiousness, we may reasonably expect a beneficial change if it should be hereafter in the power of another organ to give a new direction and regulation to the mind.

764. Every art and science requires adaptation to the state and progress of the human mind, and to this we owe the changes of logic, both ancient and modern; and although precedence in *Syllogistic Logic* must be conceded to Aristotle, and that of the *Generallogical or Inductive Logic* to Bacon, for by them they were distinctly established; yet the first borrowed Syllogism from the Rhetoricians and Mathematicians, and the inductive process was not exclusively the discovery of the latter; his ancestor, Friar Bacon, is even supposed to have laid the foundation of his attempt in his "*Opus Majus*."* Socrates, however, according to his disciple, Plato, whose "Dialogues" afford still the best examples of the Generallogical Process, though misapplied, appears to have been the first and greatest master of the mode, nor was it unknown or unnoticed by Aristotle; but the Induction of Bacon differed from that of Socrates, and chiefly in this, that Bacon adapted it to the discovery of Physical truths, and Socrates applied it to the confutation of Moral errors.

765. But it detracts nothing from the reputation of Bacon and Aristotle to affirm that neither

* See Hallam's "Hist. of the Mid. Ages."

the one was the discoverer of Induction, nor the other of Syllogism, both of which belong to the Mind; for nothing True is New, but Eternal, and to this imputation all inventors are obnoxious. And to the great Verulam was reserved that application of Induction which has been so effective in the Physical Sciences, and of such practical advantages in the utilities of life, that the epoch of Logic and Philosophy, as modern, will be assigned to him and his time by true historians.

766. Bacon was, perhaps, led to adopt this mode as much by his judicial habits, in which Induction, as the Logic of Legal Evidence and Circumstances, is indispensable, as he was by the bent of his genius; and although it is known that he left his great work, the "*Novum Organum*," unfinished, and very incomplete, we are not aware of any adequate attempt to perfect the Logic of Generalism since his time. The Abbé Jurain has, however, treated on this branch of Logic, in a small volume, well worthy of attention, entitled, "*La Logique dégagée de la Dialectique*," sect. i. c. 2; and Dr. Shaw has thrown out valuable hints for its improvement in his edition of the "*Novum Organum*." Dr. Todd, Professor Whewell, and Mr. Mill, have more recently contributed treatises on the subject.

767. *Syllogism* confirms only Single Propositions, and carries them down to *Individuality*, but it neither bears out nor establishes any General

doctrine, much less the Universal. Hence the Aristotelian Logic broke up and frittered every subject of human science into trivial distinctions and Individualities. In remedying this, the Baconian Logic has done enough to shew clearly that the progress of Philosophy is dependent on and coincident with that of Logic, and the Logic of Induction, which is *Generalogical*, aims at carrying up Individuals to Species, and Species to *Genera*, although it accomplishes these empirically and imperfectly.

768. But for the complete progress of human knowledge and attainments a *Universal Organ* is still necessary, and the only other is *Analogism*, which developes the mind universally. And if such organ has not yet found a place in Logical Science, it may have been from the narrowness and vagueness of philosophic conception embracing no complete Universality, and few correlative lofty Generalities, or from the infinitude of Reason and diversity of its methods and objects; but more than all from the arbitrary looseness and range of thought throughout the universe, whereby Imagination usurps the dominion of Reason and Philosophy, to which all Logic is accountable.

769. Evidence is the matter of Logic, and of logical evidence there are two distinct kinds,—the *evidence of Reason* and Understanding, which is *à priori*, and the *evidence of Sense* and Experience, which is *à posteriori*, which, although they are

concurrent, are distinct and unconfounded, so that, in their proper elements, the one cannot interfere or be urged against the other, and these give distinction to the two great parts of the logical system,—the *Philological* with regard to Signs and the Senses,—and the *Noological* with regard to Reason and the Understanding, to which latter the modes of Logic have been mostly confined. To these may be added the indirect *evidence of Testimony* in both respects.

770. The *Logic of Reason* being dependent on perfect relations is certain or conclusive, and determines perfectly; the *Logic of Experience* being dependent on affections which vary with the organs of Sense, is uncertain or Indicative; but as they coincide and concur in general, Experience is amenable to Reason, as human testimony is also to both Reason and Experience.

771. The forms of Logic are *Organs*, which are each applicable to the various kinds of matter or Evidence, so that we may *Syllogise*, *Generalogise*, or *Analogise* concerning either the Evidence of Experience or of Reason, or of that which is composed of both, viz. the Mathematical.

772. Yet as the Evidence of Sense is that of Individuals and Particulars in relation, the Form of Logic best adapted thereto is that which investigates particulars, and such is the *Generalogism* or the *Inductive* form; and the Evidence of Reason is that of Universals, to which the *Analogical Form*

is appropriate, and its investigations are those of Universal Relations; while the Evidence composed of Reason and Sense, *à priori* and *à posteriori*, as is the Mathematical, has an appropriate organ of investigation and determination in the *Syllogism*, which identifies Particulars with Universals, and is Rational demonstration through General media.

773. The application of the latter Form, or the Syllogistic Organ, to the investigation of either Universal, or Individual matters, argues illegitimately according to Evidence, and affords no certain conviction or conclusion. "Yet," says Harvey, "some weak and inexperienced persons vainly seek by Dialectics, and far-fetched arguments, either to upset or establish things that are only to be founded on anatomical Demonstration, and believed on the Evidence of the Senses. He who truly desires to be informed of the question in hand, and whether the facts alleged be sensible, visible, or not, must be held bound either to look for himself, or to take on trust the conclusions to which they have come who have looked; and indeed there is no higher method of attaining to assurance and certainty. By what reasoning should we give the blind from birth to know that the sun was luminous? And so it is with the circulation of the blood, which the world has now had before it for so many years, illustrated by proofs cognisable by the senses, and confirmed by various experiments." *

* Dr. Willis's "Harvey," p. 130.

774. There are also, in a philosophical respect, three kinds of Logical Evidence: 1. In reference to the External, there are Facts and Existences; 2. In reference to the Internal, there are Reasons and Convictions; and, 3. In reference to the Medial, there are Sensations and Feelings: and these are conformable with the three modes of Logic, and when perfect are all indisputable; for of Facts and Sensations there can be no question of Reason, and against perfect Reasons there is no Fact or Sensation; nor, finally, has Sense any right to dispute either pure Reason, or Fact.

775. All Proof or Evidence is ultimately Intellectual, and the difference in its distinctions, as Moral, Logical, and Physical, consists in their sources, the last of these being from Existence through Experience, the first from Relation through Consciousness, and the intermediate or logical proof is from the Understanding through Cognition or Thought. Now, as all Cognition is, we have seen, a Unifying Process, varying in the production of Particular, General, or Universal Unities, the proof of anything consists in Including or bringing it under some General or Universal, and this rule holds in the *Generalogism* as in each of the previous processes.

776. Physical Facts are reducible to Mechanical Ratios, as these are reducible to Metaphysical or Logical Reasons; but it does not follow that all these are to be either necessarily or expediently

subjected to mathematical formulæ, or determined by common sense, although each is of sufficient reason, on its own ground, the base of the first being Material, that of the second Sensible, and that of the third Intellectual; whence it follows that Facts and Ratios are Subjects of Reason, and not Legislators to Reason, and that each has a distinctly appropriate Logic—the first belonging to Induction, or Indication by Instances in general concurrence.

777. All confidence in the general inferences of Induction is founded on the uniformity whereby Effects are invariable as their Causes, and both conformable to an Eternal, Universal Analogy, of which none, however ignorant, doubt. Hence all mankind are determined thereby in all their acts and affairs, even to a secondary reliance of men on men and things, however arbitrary and conventional, under similarity of circumstances, altogether being based on an invariable original analogy.

778. Some of the finest illustrations and examples of this Generalising Logic are those inductions upon which the Tables of Annuities and Insurances, &c., are constructed, continually improved, and never perfected, which consist in an equal mixture of Experience and Reasoning.

Such also are those on which the whole Doctrine of Chances, as it is called, is founded; not only employed by gamblers, but of great use and abuse

in the commonest affairs of life, as we have seen in the various public speculations, or bubbles, which have either succeeded beyond Induction, or failed from its insufficiency ; and it descends to the private undertakings and commerce of life, all of which are made upon Instances, Indications, and Inductions, well or ill computed, of profit and loss, and the advantages and disadvantages in which false generalisations and balances of reasons so frequently betray the adventurers, as no appeal to gazettes need enforce, widely demonstrating the importance of correct Logic throughout the judgments and affairs of men.

779. The previous remark respecting our Analysis of the Syllogistic Logic may equally well apply to the following outline of the Generallogical Logic, our design therein being not to teach it fully as a Method of Science, but to illustrate and establish its Logical and Analogical relation and foundation, and to expand it to its entire boundary, while confining it to its legitimate function, and subordinating it to a systematic whole ; still referring the Logician to the fountain of inductive science in the "*Novum Organum*" of Bacon, as we have done for that of the Syllogism to the "*Organon*" of Aristotle.

SECTION II.

INDUCTION.

780. THE last of the three modes, organs, or forms of ratioecination, is the GENERALOGISM or INDUCTION, which is a colligation or generalising process from particulars, and is the logic of instances and individuals; and it argues synthetically from the *particular*, or partial relations, to the *genera*, or general relations of things: it is, therefore, the extreme mode of logical science opposed to the ANALOGISM, which argues analytically from *universal*, entire, or perfect relations, to species and *particular* relations. We have just before shewn that the *syllogism* lies between them, as a middle mode.

781. The *simple* generalogism argues from a single instance, or individual, to a particular, a general, or a universal. For example:

Instance . . . <i>Cromwell's</i> usurpation succeeded.	
Particular	Inferences { <i>Napoleon's</i> usurpation will succeed. <i>Other</i> usurpations will succeed. <i>All</i> usurpations will succeed.
General	
Universal	

And these are Induction, or inference from Examples, Similitude, Indication, or Instances, *i. e.* *Analogy*.

782. Arguing from a particular is precisely the

weakest of all legitimate arguments, not at all allowable in the other modes, but very common in colloquial practice, though rather rhetorical than logical, since its evidence does not amount to probability, but demonstrates possibility only. It is strengthened in proportion as we increase or add to the number of its analogous instances or examples, as it is, also, by extending its relations; and it then becomes a *compound* generalogism, or aggregate induction, the strength of which lies, also, in the extent and number of its related instances, and the paucity of its opposite or negating induction.

783. The positive or affirmative logical principle of induction founded on the uniform relations of nature is, that *whatever holds for true in any and many instances, holds also for true in every and all Similar instances*, and the negative or exceptional principle is that of *Dissimilarity of instances*; so that, in fact, the induction is but an assertion or ascertaining of *analogy* between its members; and if the case should involve both these positive and negative principles, the determination of such analogy will be *according to the preponderance of agreement or disagreement of either the affirmative or negative instances*. And these principles are in accordance with those of the syllogism, *De Omni et de Nullo*, which we have shown also to be rules of Analogy.

784. God is real, but with man all other reality

is reality of *relation* only, *i. e.* of *Analogy*: hence all logical demonstration terminates in reality of relation, *i. e.* *Analogy*, and both are dependent on Universality of relation or unity. The *General relations* of nature are but the included parts of this *Universality*, and in demonstrating them from the *partial and particular realities* of nature, through Inductions, we do but disclose this *Analogy*; as we establish also general rules.

785. In every Induction, unless there be a real Relation or Analogy throughout its members, there can be no inference even of probability, much less of certainty, yet it is as common as it is fallacious to build arguments on mere mental associations of things, ideas, or even of prejudices, and to regard them as effects of causes, although, if such associations were real relations, they would amount only to the induction of a Particular.

786. Thus men superstitiously infer good or ill fortune from certain days, &c., on or with which they may have experienced either; or they attribute worth, ability, or the want of them, to another's success or failure in a single instance; or, as they infer that the Weather and Tides are caused by the Moon because their motions coincide—that the Doctor cured the Disease because the Patient recovered—or that he died absolved, or with a good or ill conscience, because he departed with, or without, fear and trembling: in all such cases attributing cause to concomitance, although there be

no real relation or analogy therein to justify the inferences.

787. It is then a rule of Logical Induction, *that it should include analogous or similar Particulars ; i. e. Similarity of Instances under a Generality Induced or Deduced.* But in Inductive Descriptions of any Whole, of which the Particulars it includes are Dissimilar, such Whole is not General but a Principal Particular, whence no Induction or Generalogism ensues, but only a Synthesis or Analysis of a whole, or an Enumeration of Parts. This rule applies equally to the most complex and most simple subjects, the sole condition being that the instances adduced, however dissimilar, must concur as particulars in the general inference.

788. Thus, for example of a Complex subject, men talk of *Civilisation* as they do of *Truth*, supposing every one to have a definite understanding of the thing or idea signified, although it is a very Proteus, and to be generally defined only by a vast Induction ; wherein, if it be assumed from acknowledged instances, that *Civilisation is the sway of Intellect*, this will appear in forms and shapes innumerable : thus, *intellect* exercising moral reason in the abolition of slavery, *civilises* humanity. If absurd rites and unjust ordinances in religion or politics are abolished, it is by the operation of reason and *the sway of intellect*, and *civilisation* advances. When refined art, by Poetry, Music, Painting, &c., *civilises* mankind, it operates by

sense and mind—the *sway of intellect*. If by mechanism and the hand, thought and learning be made permanent and spread throughout the world, the whole is the *energy of intellect* in the *civilisation* of mankind. Are idle distinctions, empty titles, pageantries of state, and the gauderies of sense and ceremony suppressed in practice, or confined to plays and pantomime, it must be by the higher appreciation of *intellectual distinction*—the progress of *civilisation*. Should society in the end cease to estimate men and character, as they estimate pigs, by their market-value, breed and wealth, as they must do if *civilisation* advance, and worth becomes duly esteemed, it will be by the *sway of intellect*; to which the God of Intellect presses onward his creatures to the reign of *truth* and *good*, true refinement, and *civilisation*. Thus is *civilisation* induced and defined, *the sway of intellect* through many concurring instances or particulars, and referred for confirmation to many more, against which there are no negative instances of any weight adducible to prevent a perfect Generalogism from being established universally through *Analogy*.

789. As the world, viewed by reason or active intellect, is a universe, or whole, and its parts are unities, or lesser wholes, so, when viewed sensibly, or by passive intellect, things consist and exist in infinite variety; at the same time, active and passive intellect, or reason and experience, concur in *reducing this variety to unity*, or order, on the

one hand, and, on the other, in *deducing generals, or unities, from the varieties of particulars*; and this is the twofold office of the generalogism.

790. There are, then, two species of the generalogism, the materials of both which are particulars: by the first we *class or arrange particulars under a general term, and generals under the more general and universal*; and, by the latter, we *gather that which is general among a variety of particulars, and ultimately that which is universal from generals*.

791. The first is properly an *induction*, or predication of Species and Genus, and determines the rank, or class of particulars, with regard to each other and to *universal being*; and the latter a *deduction* thereof, and determines the most general or *universal relation*, predicate, attribute, or form of a class of particulars: the one terminates in the category of *Existence*, the other in that of *Relation*, under which all knowledge is comprehended.

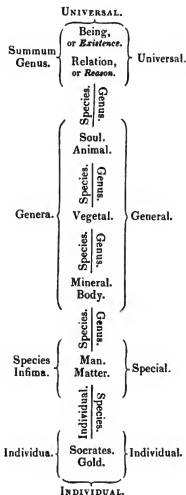
792. Thus *Universal, General, Special, and Individual*, are terms expressing Logical Relation and subordination, whereby the chief Premises of the Analogism are Universal, those of the Generalogism or Induction are Particular and Individual, as Extremes of which the Syllogism is the Intermediate Organ, through General Media connecting the Particular and Universal as its chief or distinguishing Premis; the whole together founded on ANALOGISM.

793. No Individual negates or excludes its Species, no Species its Genus, nor any Genus its Universal; but the Universal includes and affirms the General, and the General includes the Special and Particular through all orders; without which universal relation there could be neither Logical Argument, Conclusion, nor Subordination of Nature: it has, accordingly, been admitted as a universal principle by logicians and philosophers, and is the same for every method.

794. In analysing and distributing the Categories of Aristotle, we have shewn that they are entirely resolvable into two concurrent Universals, the one Logical and the other Philosophical—the first in respect to all *Knowledge or Relation*, the other in respect to all *Being or Existence*, and that they concur analogically throughout the *Universe*, and consequently comprehend the entire Analogy or Relation of Genera, Species, and Individuals of all things, Analytically, Synthetically, and Antithetically, which Analogy is represented in the following Scheme,* of which the *Universal* and *Individual* are concurrent poles:—

* See “*Artis Logicæ Rudimenta, with Observations*,” sect. 6. See also Brerewood’s copious and curious volume of Analyses, “*De Prædicabilibus et Prædicamentis*,” Tract iii. sect. 17, &c.

795.



796. We may now proceed to distinguish the generalogism categorically into the *Material Gene-*

ralogism, or induction of the matter, or logical subject; and the *Formal Generalogism*, or deduction of the form, or predicate.

SECTION III.

797. By the MATERIAL GENERALOGISM, or generalogism of the subject, we collect particulars or individuals; as, for example, Charles, Edward, Frederick, William, Mary, Georgina, Catharina, &c., and unite or class them under the predicate or general term, *Man*; and again, we collect the general terms, Man, Horse, Dog, &c., and connect them under the more general term or genus ANIMAL; again, we collect the higher genera, Animal, Vegetal, Mineral, under the most general term, MATTER; finally, we collect the superior genera, Matter, Sense, and Intelligence, under the superlative, categorical, or universal term, EXISTENCE.

798. Thus we induce, or determine, the rank or class of the subject, particulars, or individuals, Charles, &c., with respect to universal existence, by arranging them under the general natures or terms, Human, Animal, Material; and this we call an induction of the matter, or subject: and though, by a series of generalogisms, we thus connect the extremes of universal and particular, the intermedia are infinite. Thus, between the terms Charles,

&c., and Man, lie European, Asiatic, &c.; and again, between Animal and Material lie the terms Terrestrial, Aquatic, Atmospheric, Planetary, Solar, Sidereal, &c., and so on intermediately without end.

799. Again, by the *Formal Generalogism*, or generalogism of the form or predicate (upon which the great Verulam founded his “*Novum Organum*”), we investigate, for example, the particulars, Charles, Edward, Frederick, &c., and find in each a *material structure*; but this includes also Animals, Vegetals, &c.: we discover in each, *Sensation* also; but this yet includes all other animals: and, finally, we find, upon further investigation, in every man *Reason*; and this, excluding all other things, is his peculiar attribute, characteristic, or most general predicate, or *Form*, under the universal term, or category, **RELATION**.

800. Such, briefly, is the formal Generalogism, or *deduction of the form or predicate*; wherein, also, the intermediate stations or distinctions are innumerable between the extremes of the lowest material and the highest rational, or relational nature of man. By these species of Generalogism we *abstract* the general or common nature of particulars, as by the foregoing we *aggregate* or *congregate* particulars by the general natures in which they agree; by both we *generalise*, or *generalogise*.

801. Truth is established by Analysis when Individuals are induced subsumptively under Ge-

nerals, and by Synthesis when general truths are deduced from Individuals presumptively. They are, therefore, converse methods, of which *Induction* is properly the direct process, and *Deduction* the inverse process, correlative in *Generalogism*.

802. So much with respect to the Generalogism by way of outline. As, however, this mode has been little advanced by logicians since the time of Bacon, who confessedly delivered it imperfectly, we will endeavour, for the sake of research, to retrace it in another view.

SECTION IV.

803. The world around us consists, then, we repeat, of a universal variety of particulars and generals; and this variety, philosophically viewed, is either *Essences or Relations*; or, logically and philologically, it is a variety of *subjects or predicates*; or, physiologically or physically, of *substances and qualities*, or properties, &c.: and of these the signification is the same under different views. We have already considered the Generalogism in a logical view; but as this mode is principally applicable to *physics*, we will also regard it physically.

804. As the term particular, or individual, physically and logically, like its correlations, general and universal, signifies a unity, it must be a *unity*

of parts, or an integer; there is, therefore, nothing in the universe absolutely particular or singular, and accordingly *every particular sensible thing, or subject, consists of an assemblage of qualities, or attributes; and every quality exists variously in a variety of subjects or things; and this accords equally with reason and experience.*

805. The particulars or premises of a generalism may, therefore, be collected *analytically* as well as *synthetically*, and it follows from the above that, by the analytical process, we either seek all the attributes or qualities of a subject or substance (as, for example, of Gold), or we seek all the subjects or substances of a quality or attribute (as, for example, of Heat), and from these we deduce the general nature of a subject or substance, or of an attribute or quality; the first of which may be called a *generalism of the matter*, the other a *generalism of the form*; and thus the generalism takes the same distinctions physically as logically. Of the synthetical process we have already given brief examples.

806. As the particulars of the world may be regarded, first, as Essences, Subjects, or Substances, &c., or, secondly, as Relations, Predicates, or Qualities, &c., according to the category under which they are viewed, the distinctions of Subject and Predicate are reciprocally convertible or interchangeable, both with respect to the syllogism and generalism; we may, therefore, generalise of

things either as Subjects or Predicates, analytically or synthetically: as, for example, of *Heat*.

807. The terms, particular, general, and universal, being relatives, and there being no *particular* that partakes not of a general or manifold nature, neither is there any *general* that may not be regarded as particular. Hence, any general or aggregate may, by the analytical process just mentioned, become the matter, or premiss, of a generalogism. The same also holds with respect to *universals*; the generalogism is, therefore, a universal and infinite process.

808. As the synthetical process ascends to the Genus, or to that in which particulars unite or agree, so the analytical process descends to the subordinate agreements and specific differences of particulars. Thus the variety of particulars, John, Thomas, Henry, &c.; Lion, Horse, Dog, &c.; Elm, Yew, Rose, &c.; Nitre, Iron, Clay, &c., agreeing under the term *material substance*, differ under those of *Animal, Vegetal, and Mineral*. Again, of the particulars, John, Thomas, &c., Horse, &c., agreeing under the term *Animal*, differ under Human, Quadruped, &c.; and again, the particulars, John, Thomas, &c., agreeing under the term *Human*, differ under those of *Brown, Fair, &c.*, which latter are distinguishing differences of the Individuals, &c.

809. The differences of the individual are the variety of which it is constituted, and being un-

folded by analysis, become the matter of the generalogism before mentioned.

810. In every species or form of the generalogism—and it is that which distinguishes it from the other logical modes—there is, first, a *collection of various particulars*, by synthesis or analysis; and, secondly, a *disclosure of a generality*, or agreement among them. To generalogise is, therefore, to generalise; and this may be done affirmatively or negatively, by collecting or rejecting of instances and particulars, till the general, or universal term or proposition, is confirmed.

811. In fact, the induction rests upon the analogy of nature, by which we recognise its uniformity and constancy, and conclude from causes to effects; inferring from similarity or analogy of causes, to similarity or analogy of effect, &c.: so that, in strictness, the analogical process is at the foundation of all logic.

SECTION V.

812. When, by analysis of a general or universal, the *Generalogism* seeks the agreements and differences of things, it verges upon the *Analogism*; so, in particularising, we have remarked that the latter mode verged upon the former synthetically; at the same time these two processes concur in the

Syllogism antithetically : these three modes, therefore, reciprocate, and are also convertible.

813. It is an essential distinction of the three forms of argument that the Analogism concludes *immediately* ; the Syllogism, *mediately*, or through a middle term ; and the Generalogism, through *many media*, or particulars, to universality.

814. It is a further distinction of these forms that the categorical, or perfect Analogism, concludes and proves *the whole amount of its premises* ; the Syllogism, *less than the amount of its premises* ; while the conclusion of the Generalogism comprehends in general *more than its premises* : whence the fallacies of this latter mode.

815. The logical axiom—that *no more can be strictly inferred or concluded from any argument than is contained or included in its premises*—holds good not only in the Analogism and Syllogism, but also in the Generalogism. *Without universal in the premises therefore*, there can be no *universal or perfect conclusion* ; but this is generally impossible in the Generalogism, because particulars which constitute its matter, or premises, are infinite throughout nature. In any case, however, in which all its particulars can be enumerated, a perfect inductive argument may be constructed ; as, for example, in numbers, agreeably to the axiom that *the whole is equal to all its parts*.

816. The force and extent of evidence in the Generalogism is, consequently, proportionate to

the number of parts, particulars, or media, it comprehends or contains; and, if this fall short of universality or totality, its evidence (however sufficient it may be in general to satisfy inquiry) amounts only to some high probability, and not to certainty, perfect cogency, or necessity.

817. The logical axiom, according to which "*things that are equal to the same third thing are equal to each other*," establishes also that the halves, or other proportional parts of such equal things, are also equal to each other; and these inferences are universally true from demonstration of reason or relation, without an Induction of all the parts and particulars.

818. The same is conclusive of all homogenous particulars; but Induction of all the particulars of a subject is impossible in physical and sensible things, which are therefore incapable of entire and absolute demonstration.

819. *Induction* forms, collects, and classes propositions and things according to their specific or individual relations; *Syllogism* connects them according to their Generic or General relations; and *Analogism* discloses their chief or Universal Relations; but inasmuch as the offices of each organ or process is the disclosing of relations varying only in degree, they participate each other's nature, or reciprocate analogically at their foundation.

820. It holds equally true in each of the three modes, or forms of logic, that *there can be no con-*

clusion out of the category of an argument ; that is, no arguing conclusively from one universal genus to another. In the strict logical investigation of any subject, it is then of chief importance to keep in mind that the premises and conclusion must be reciprocally homogeneous, and that logic is modified by every subject.

821. Therefore, Essence and Relation being the sole categories, and the EXTERNAL, MEDIAL, and INTERNAL, the universal genera of knowledge, having each its appropriate evidence, we cannot conclude logically from one to the other ; and as the evidence of the first of these three genera is *matter of fact* (such as are the testimony of witness, experience, and history), while the evidence of the second of these genera is *sensations*, and that of the third is the pure and *perfect relations of reason*, we cannot conclude from the relative to the absolute, nor the contrary ; nor from reasons to facts, nor the contrary ; nor from either of these to sensations ; nor, *vice versâ*, from either. As, however, there is no absolute separation of the three genera, each may be used in aid, or illustration, of the others, although it will afford strict logical conclusions on its own ground alone.

822. Conviction through truth is the great end of logic ; and it is apparent that this, in *matters of doctrine and science*, can alone be adequately obtained through pure intelligence and reason, or relation,—that, in *matters of taste, sense, and disci-*

pline, truth and conviction are dependent upon sense,—that, in *matters of fact and art*, they depend upon external testimony and experience, or experiment; and that, finally, in complex matters, truth and conviction must be sought through a compound testimony with all possible attention to homogeneity and genuine analogy.

823. We see, hence, why, in common phrase, “*Facts are stubborn things*”—why “*Tastes are not to be disputed*”—which may be asserted of all feelings and affections also; and why *the conclusions of genuine reason are not to be resisted*.

824. Were it otherwise, conviction might be obtained through physical force, which is the logic of Power,—the right of might,—and adapted to the irrational only, and to be employed only in those offices of authority in which reasoning would be either misplaced or absurd; as in the disciplining of Children, the executing of Laws, or the commanding of Armies, which, although they require to be founded on reason, dispense with argument, and give *orders* only, in practice. Between these several cases there are, however, many media. So much with regard to Dialectics, and respecting the first forms or operations of Logic. But Logic is an infinite discipline, and were we intent on an entire and practical developement thereof, it would be necessary to shew in what manner these forms compound and vary according to the various relations and applications of discourse truly analysed.

825. It is more essential, in the first instance, to repress the false hopes and pretensions of Logic and Science, that time and powers may not be wasted in vain research; for in vain do Physiologists seek *Seminal Principles* through Induction. The great Harvey failed in this attempt. In vain do the Chemists seek *Material Elements* by the same means, wherein Davy and our contemporaries will have also failed. And in vain also do the Metaphysicians, in like manner generalogise in search of *Spiritual Essences*, in which they must equally fail; for in a System of Universal Correlation there can be no first or absolute principle knowable.

826. Accordingly, when, by Physical Analysis, Solid *Matter* has been resolved into Liquid, liquid into Gas, and gas into *Æthereals*, their correlative, positive, and negative Elements are finally forced into *Mind* as active and passive principles imperceptible by *Sense* till reunited in electrical concurrence.* Thus the System of Nature terminates in an ultimate Analogism; for by whatever process nature is urged to a final extreme, it is forced into *mind*, the abode of first principles,—the *Mind out of us*,—the *Analogon of all Nature*, and of the *Mind within us*:—whence it follows that the whole of Human Nature, Sense, and Soul, resolves into correspondence with the Great Intellect and Logos “in whom man lives, moves, and has his being.”

* See Anal. Phil. vol. ii. p. 59.

APPENDIX.

CHAPTER I.

METHOD.

827. THERE remain for notice, according to the custom of logicians, somewhat concerning METHOD, as a mean for the discovery and promulgation of truth and science, and somewhat concerning the *Sophistical Arts and Fallacies* by which logical truth is corrupted and perverted: and, first, of Method.

828. Since, then, our object is not the art and practice of Logic, but the science and plan, we may briefly remark that Method signifies a way or regulation according to relation, and that our whole system aims at supplying the best possible method, namely, the Analogy of Nature, in which every subject may be considered and treated with reference to all other knowledge in the same uni-

versal way—open till we have entirely examined and exhausted it, by first tracing and considering it in its nearest and most prominent, and ultimately in its remotest relations, *analytically* and *synthetically*, or *antithetically*, according to the subject.

829. This brings us to the two divisions usually assigned by logicians to Method; namely, *the method of solution* and distribution, called analytical; and *the method of composition* and aggregation, called synthetical; between and connecting which lies an antithetical method, or *method of comparison or analogy*, by which we systematise, put in order, and harmonise any subject.

830. Some obscurity of signification has, however, attended the two former distinctions; analytical and synthetical *à priori*, being the contrary or opposite of analytical and synthetical *à posteriori*. So, again, physically analytical is the converse of morally or intellectually analytical. The sense, however, in which we have employed these terms, is that of the intellectual, or *à priori*.

831. The author of "*Vindiciæ Antiquæ*," in quoting Dr. Campbell's "*Philosophy of Rhetoric*," has remarked that "he appears to use the terms Analysis and Synthesis in a sense altogether unwarranted by the analogies of the Greek language, and unsanctioned by use. *Analysis* universally signifies in philosophic language the *Reduction* of a whole to its component parts, so that by its means we never can ascend from particulars to

universals, and it is equally impossible to descend by *Synthesis* from universals to particulars, for *Synthesis* always implies *apposition*, and the formation of one out of many."* Such also is the modern sense in which these terms are employed by the chemists, although frequently confounded in other subjects;—and agreeably to this sense the argument *à priori*, or from the mind to phenomena, or from the cause to its effects, and that *à posteriori*, or from effects to their cause, are identical with Analysis and Synthesis as thus distinguished.

832. Of these *methods*, the *analytical* is the true *doctrinal* method applicable to science and philosophy, of which the present work may be regarded as an example. The *synthetical method* is *disciplinary* and applicable to the Disciplines and Arts; as, 1st, to that of Philology, which, beginning with letters, proceeds to words and propositions; 2dly, to Logic, which, beginning with words or terms, proceeds to propositions and arguments; and, 3dly, to the Mathematics, which, beginning with terms and definitions, proceeds upon axioms and postulates to propositions and demonstrations, &c. The *antithetical method* is technical, at once theoretical and practical, and applicable to all the Arts: the three methods are nevertheless efficient in each respect; and hence they have been variously applied and confounded therein.

* Classical Jour. vol. xvii. p. 120.

833. Accordingly, the first care in teaching an art is to make the disciple acquainted with its materials and instruments, and with their right use or *Discipline* ; the next thing is to instruct him in its theory, regulative relations, and *Science* ; the last is to initiate him in producing their goods or ends practically, and with *Art* or skill, according to true natural and logical method ; and, in accordance with the series of Causes (for art is cause), as enumerated by Aristotle, the material, the formal, and the final, which coalesce in the efficient or producing cause of every art.

834. The above method goes to the whole of every subject, and even distributes itself among each of its distinctions, as discipline, science, or art ; for Logic is a system of Co-relation throughout, and affects not, but rejects, the absolute. And as every Proposition consists of a Subject, Predicate, and Copula, and every simple Argument has three Propositions, a Major, a Minor, and a Consequent, so, finally, should every regular Discourse, whether a Treatise, an Oration, or a Poem, involve an Exordium, beginning or introduction,—a middle, argument, or Dialectic,—and an end, Peroration, or conclusion ; and they must have truth or correctness, order and completeness, constituting a Unity or whole ; and each tripartition is a universal principle of arrangement for every work as a whole and throughout its parts.

835. Logicians have been, as usually, fertile of

divisions and distinctions under the head of *Method*; we shall, however, be brief and adduce only the most obvious and useful.

The three logical Rules of Division and the Distribution of the Whole are, 1. *That the Members shall exhaust the Whole*, or that the Division shall be entire; 2. *That the Members shall be correlated or opposed*; and 3. *That one member shall not contain or predicate another*, or that the divisions shall be distinct; therefore for the Divisions of any Whole to become distinct in *difference*, correlate in *agreement*, and entire as a *whole*, they must be distributed according to truth and relation analogically.

836. Although distinctions in Science as in Nature are endless, the multiplication of distinctions is no mark of science; because all distinctions of genera and species are relative, and there are no absolute divisions: that is, every individual, however remote, still holds relation to every prior species and genus, whence the further we divide and distinguish, the more we obscure and confound, and the only true distinction between Science and Nescience consists in the perspicuity and perspicacity of knowledge by the former. Thus the first combinations of generic colours are clearly distinguishable species, the secondary combinations are also distinguishable, —after which the recombinations are distinct only to the disciplined eye, and the end of the process is in all cases *indistinguishableness*. If we reverse

the process and analyse the compound, we re-attain the generic distinctions, or primary colours, and exemplify the Antithetical Method.

837. The whole of Logic is the Science of *Method* distributable according to the logical operations into three kinds, the Generalological, Syllogistical, and Analogical, which are nearly coincident with those we have enumerated as the *Methods of Composition, Solution, and Comparison*, the latter of which is the Analogical Method, and requires, first, that we define and analyse a subject to ascertain its various relations, and then determine its antagonist extremes, whence we may attain the true mean of inquiry.

838. Suppose, for example, the subject of inquiry to be the popular one of *Socialism*, which may be defined the association of men in families for a mutual object; and having unfolded its variety by analysis from the association of the Den to that of the Monastery, including Owenism, of which forms we find the object on one extreme is "*to establish sensual and social enjoyment at a maximum, and to dispense with priests and religion*," and that its antagonistic, or opposite extreme, is *Monachism*, the object of which is "*the utter mortification of the sensual and social man, and entire devotion to religion and priesthood*," we may then more readily attain by comparison of their goods and evils—advantages and disadvantages—the true *social mean*, and may fairly conclude, that as men,

in all stages and states of social union, are prone to degenerate to extremes of social and sensual enjoyment, it is salutary and expedient that they should cultivate and encourage in themselves and each other self-control and communion with God; but according to what method cannot safely be committed to either Monks or modern Socialists to determine.

839. Other *Logical Methods* are the well-known mode of *Syllogism*, which proceeds by assertion and media; and the no less celebrated *Socratic or Interrogative Method*, which we have already noticed as proceeding by question through *Induction* to the end in view. To these we would add the *Method of Concession*, computing through Analogism, by conceding the antagonist's position or positions, and carrying them to extremes, which involve the mean assumed in absurdity; and in this way every false assumption worked out confutes itself.

840. Suppose, for example, that some politician shall assume the position that *Universal Suffrage is the constitutional right of the members of the community*. Let it be conceded without distinction of sex, and he will allow that *Women have such right*, and either give up his position, or grant that *they ought also to vote*. If the latter, concede it with the addition that *Members under twenty-one years of age have like right* and often greater judgment than their elders, and that therefore *Youths of*

both sexes ought to become suffragans without distinction of age, &c., by which time he will suspect the absurdity of his position, and, without forcing further argument, yield you the expediency of a relative established mean. To this method most questions of party are obnoxious, and its force is increased by its conciliatory spirit.

841. Among the further variety of Methods, all of which are modes of Analysis, Synthesis, or Antithesis, the most entitled to attention are those of *cause and effect*, the *experimental method*, and the *chronological*. All methods, according to Aristotle, require *declaration* of the subject-matter, and *demonstration* thereof. His rules are, 1st, in declaring, to *define the subject-matter*, and to *begin well is the half of the whole*; 2d, to *adapt the method to the matter*; and 3d, in demonstrating, to *begin with principles most known*, proceeding from causes to effects.

842. Analogism requires us, in arguing from cause to effect, or *vice versâ*, to note that *every cause involves an agent and patient*, and that *every effect is produced from action and passion*, or reaction. This refers to *simple* cause and effect; but some effects are the result of many causes or concurrences, consequently such causes and effects are *compound* or complex, and are of more difficult analysis in proportion to their complexity.

843. The *Experimental Method* is a mixed Logic determined by the case, to which the laws of

method are especially applicable ; and although this title has been given to the Induction, the proper office of which is to *generalise*, it is more commonly the opposite of Induction, by its seeking of *particulars*, which is the office of the practical Analogism ; this method is accordingly variously Analytical, Synthetical, or Antithetical, and is the most diffuse and practical of the whole, and much dependent on experience and circumstances.

844. When many circumstances are brought to bear upon one point or *particular*, they are admitted to strengthen the proof thereof by a *general* agreement, which is also called Induction, and the wider and more abundant such concurrence is the more powerful is the proof of the question considered.

845. An extraordinary concurrence of many circumstances can only happen from a breadth of relation coinclusive of all the circumstances, and binding them in a logical identity that gives to the evidence a logical power beyond any human testimony, depending, as it does, on a Universal Analogy that ascends to the Source of Truth. The Method and Logic of Circumstances is, therefore, the proper resort of sagacity and experience, wherever simple and immediate logical evidence is unattainable. Hence every method and all the modes of Logic are available in the *experimental method* and *logic of circumstances*.

846. There is, finally, the *Chronological Me-*

thod, proceeding according to dates, and essential to the recordings of the historian, without which facts are thrown into false relations, or posited contrary to truth. This is the *Historic Method* familiar to all men and dependent on memory, as the Poetical Method, using fictions, does on Imagination, and as the Logical and Philosophical does on Reason.

847. The principal object of the *Chronological Method* is to avoid Anachronisms of Facts ; but the Anachronisms of Reason are not less common than Anachronisms of Sense ; nor is it less offensive to truth and understanding to see effects placed before causes, conclusions precede premises, or any how the posterior before the prior, than it is to see the course of facts and occurrences inverted. The true succession of words, thoughts, and things, is *chronological*, as their true relations are *analogical* or co-expansive ; the one is a relation of time, the other a relation of place, internal or external.

848. As to *TOPICS* or *places*, which have also been called the *fields* and *mansions* of argument, and have been a principal division of Logic from the time of Aristotle, it properly belongs to philosophy, which is the system of all places and relations, and it is a sequent to *method*, and no otherwise appertinent to Logic.

To *topics* belong the subjects of inquiry, and we have shewn throughout in what manner and relation the instruments of Logic are appropriate to

their principal genera and divisions; for which, therefore, we refer to philosophy, of which Logic is the counterpart.

849. Knowledge being a whole, which comprehends the universe, every part and subject of which being also variously related to all other parts, the differences of Subjects and Things are *differences of position*, and are so called, whence arises the variety of *topics* and subjects throughout the universe of knowledge.

850. Hence every subject or position that becomes a universal question, being partially treated, must result in failure or *fallacy*,—as has been exemplified in most questions of controversy, wherein polemics having run into confusion, succeeding inquirers have discarded the simplicity of Universality for the simplicity of Particularity, that of breadth for that of narrowness; and thus the question of Beauty has terminated in ascribing to an individual line or quality a relation that is Universal: and questions of even higher interest, such as those of Moral Good and Evil, Disinterestedness, Liberty, &c., have fared no better.

851. There is, therefore, a primary necessity for a true universal system to the perfecting of knowledge, to which every topic and particular inquiry of man may have reference as a *method* and measure of its truth, or logical validity, and sufficiency, and this nothing but Universal Philosophy can supply.

CHAPTER II.

SOPHISTRY.

852. ALTHOUGH the end of Logic is the attainment of truth, it has a negative purpose in the detection and confutation of error; and as the rules of Logic are sometimes perverted for the sinister purposes of deceiving and contention, and there is also a misapplication of its organs which terminates in undesigned error, some examination of the grounds of SOPHISTRY, or *Logieal Fallacy*, may be justly deemed an essential appendage of logieal discipline; and as such it has been regarded by the principal masters of Logic.

853. Under *Sophistry*, then, we comprehend all logieal *frauds* and *fallacies* which, as a subject, traverses the whole logieal universe. It is not incumbent on us, however, to develope all its ramifications, since it will suffice to disclose the most general and hackneyed forms in which it embraces the chief organs of logic, as base art, or as ignorant inadvertence, the grounds of error, confusion, and controversy. The fallacies of sense and association

are sources of false judgment, often carried as principles into argument sufficient to fill volumes, and a history of prejudices alone would be a history of mankind.

854. Every folly, every vice, and every crime; every error and mistake of men, involves a logical *fallacy*, and not unfrequently a regularly-constructed *sophism* adapted to self-deception or the deceiving of others. The habit of excuse-making is a regular art of such false logic. All orders and professions abound in such *delogy*. It is the demon of mankind. To resolve all the fallacies of Logic would be a greater task than those of Hercules, yet very much resembling the cleansing of the Augean Stables, and as detestable an office to intellect, but happily the progress of logical intelligence will, in its course, purify the mind from fallacies.

855. All fallacies of the mind are logical, and as the mind is engaged in every voluntary act and thought of men, the boundlessness of the subject is apparent, but it is a fertile one wherein logicians have delighted to revel, and to which they have given needless attention and importance; for as Truth and Fact, and not Fallacies, are the proper light and object of Logic, wherein falsehood disappears, the research of *fallacies* and extrication of errors are little better than explorings in darkness.

856. By this we mean no more than that the establishment of correct Logic must supply the

laws of truth whereby fallacies become detected and resolved, as light expels darkness, or converts it into that *oscuro* which increases its brilliancy, and also to excuse us from entering further into a negative inquiry than inveterate errors may have rendered expedient for the correction of Logic, or chiefly as a guard against its perversion.

857. *Sophistry* lies at the foundation of the faculties, whence other principal errors of men, and a chief source of fallacy in Logic, is the *employment of the Will in place of UNDERSTANDING*, attention to which is the more necessary, logically and ethically, because men are naturally disposed to employ their active faculties, of which the *Will* is principal, to the suppression of their passive faculties, the chief of which is the *Understanding*, the source of all regulation and just control, the errors of which, compared with those of the Will, are mere shadows; whence vicious fallacies belong more to Ethics than to Logic. In the eloquence of Will, Passion, and Desire, men compromise their own Reason, and inveigle and betray the Understanding and Will of others; and it is in this chief error, to which we have already adverted, that *Sophistry* may be said to precede and transcend Logic, the proper limit of which is Understanding; hence the *Ignoratio Elenchi*, or mistake of the question, is an involuntary source of fallacy which nothing but the reform of understanding can repair.

858. It extends the bounds of logical fallacy

that the various significations of a word give rise to ambiguities ; nor is there a fallacy of Logic that can be otherwise resolved than by determining the genuine significations of the words and propositions employed therein ; when any one of good understanding and experience, acquainted with the groundwork of Logic, will not be deceived even by the most specious fallacies.

859. The *Resolution of Sophisms* requires, in all cases, that we should reduce the question to its simplest terms, so as to resolve it into its logical and philological elements, and disclose its weakness or falsehood, which lies, most commonly, in *false inductions*, assuming a Particular specifically, a Species generically, or a Genus universally, or one of these for the others respectively. In *Syllogistic Sophisms* the fallacy is usually found in the universal or major proposition, which requires to be proved by Induction or Analogism. Rules in special cases are abundant in works of Logic for solution of fallacies which are accessible without art in the minor premiss.

860. Analogism is even more capable of fallacies and false applications than the Syllogism and Generalogism, and to this it owes some discredit, and the having hitherto failed to establish itself as a universal and legitimate organ of Logic, and its confinement to rhetorical use under a false acceptance ; whence a parabolical use of Analogy that

produces fallacies that are to be carefully guarded against by the Analogist, who, in employing it, will be apt to paralogise, through Allegory, Metaphor, Simile, and to deceive himself and others by rhetorical, remote, false, and mystical analogies, in place of the logical and true. Such fallacies are, however, easily resolved by carrying their premises home to reason and fact, distinguishing their poetical from logical truth, and verbal analogies from real ones.

861. Sophistry, as an Art, has many wiles and practices, among which may be principally noticed the *assumption of false principles, the substitution of terms*, or of thoughts, or of things, or of either of these for the others; through which the premises and conclusions in each of the logical forms become vitiated.

862. Another source of Sophistry and Fallacy is the *innovation upon the premises*, by the *bringing in of new matter*, or the *leaving out of something essential*, in all of which there is a *shifting of the position*, or proposition; and accordingly, the practisers of *evasion* in any way are, in vulgar language, called *shifty*.

863. And although, in arguing on new ground, it may be sometimes expedient, or even necessary, to change the position, to rectify the premises, it is requisite, at the same time, to recommence or review the argument; but these are more fre-

quently artifices contrived to elude or confute an antagonist, than either for fair argument, or from inadvertence and self-deception, through false zeal or want of knowledge and skill: nevertheless, if there were not such craft on the one hand, and such inadvertence and credulity on the other, this discipline might decay for want of exercise.

864. To shift the argument from one genus or species to a different one more or less remote, the *μετάβασις εἰς ἄλλο γένος* of Aristotle, is rhetorical rather than logical, and, at best, when used in ignorance only, is an argument of similitude merely metaphorical. Arguing from one category to another is a like fallacy.

865. The tacit law of argument, that *a party can neither dispute nor retract a position he has advanced or admitted*, is itself illogical, and a rule only of expedience for terminating a debate without settling the question. But that which is advanced contrary to Reason may with reason be retracted, and ought to be so given up for the sake of truth and candour.

866. Every fair logical argument is an experimental inquiry wherein positions are advanced or retracted till reason and truth are satisfied; for that which is fair for one litigant is fair for all others; and if it is just for an opponent to annul his adversary's position with reason, it is fair also

to annul his own, as it is, with like reason, for his adversary to withdraw his. But this is the very contrary of the *shifting of litigants*, whereby they change their positions to escape Truth and Reason for the sake of Victory and Triumph, the common object of law advocates, partisans, demagogues, and cheats.

867. The advocate does not *argue*, but only *seems to argue* ; he does not yield to his *Understanding*, but subjects his *Reason* to his *Will* ; for which purpose he must *oppose all his strong points to his adversary's weak ones, mask his own weakness, and elude his opponent's strength*. It is upon these vicious maxims and strategy of advocacy, that partisans and politicians pledge themselves and their opponents to *consistency in error*, and the opposite vicious extreme of *shifting* in favour of truth or falsehood. C. Celsus said, "An orator only aims at the semblance of truth ;" and, "For it is not conscience but victory that is the reward of a lawyer." "Were that true," said Quintilian, "he must be the vilest of mankind who would arm wickedness and guilt with this powerful weapon, and lay down rules for the practice of villany. But I leave *Gentlemen* to defend their own opinion." *

868. The following clever specimen of *legal*

* B. ii. c. 16.

sophistry, from a recent Irish newspaper, deserves celebrity :—" Connelly, a vagrant of notoriously bad character, was arraigned for sheep-stealing at Galway Assizes, where he had often before been tried for that and other offences, committed so ingeniously that he was always acquitted for want of evidence. It was proved in this instance that he had sold legs of mutton in open market for sixpence a-piece, &c. &c. J. Lopdell, Esq., a very corpulent gentleman, was the prosecutor; and Connelly, being called on for his defence, submitted to the court that all the evidence given on the part of the prosecutor must be construed in his favour—that the fact of his having been so often tried and acquitted clearly proved he must be an honest man—that no man is known till he is *tried*—the more frequently gold is melted in the fire to prove its genuineness, the purer it becomes, and so it is with character when *tried*. He further insisted, that the fact of his having meat in his possession, and going about the country to sell it at a moderate price, was a demonstration of innocence, and proved him to be a man of industrious habits, prosecuting his trade fairly: and, finally, he submitted, that his case was analogous to that of the Prophet Jonas, for when he escaped from the whale's belly he went forth an untainted character; and so should he consider his escape from the clutches of Mr. Lopdell, who was to his mind very like a

whale, and who sought to devour him. In sum, that the whole of the evidence proved him an honest man, and it was impossible the jury should do other than acquit him." The eloquent, ingenious, and witty defence of this Hibernian Socrates, admirably illustrates the logic of the Bar, inductive, syllogistic, and analogical, and the most approved maxims of advocacy ; nor can we well doubt of the natural qualification of this man for the most elevated attainments of the bar.

869. The Advocate, Pleader, and Demagogue's practice was a regular art and artifice among the Greeks, from whom it descended, through the Romans, to ourselves ; and Aristotle reduced the art of forensic attack and defence, as he found it in the treatises of Pamphilus and Calippus in his time, to a single principle founded on the rule of contraries, to this effect, that *whatever may be urged IN FAVOUR on the one part, may be produced in ACCUSATION on the other ; and that whatever can be urged AGAINST the one, will equally answer for the DEFENCE of the other.** Coincident with which is the maxim to *turn the serious reasonings of an adversary into jests, and oppose his jests with solemnities.*†

870. There is a mode of Sophistry which consists in the *adopting of the premises to the con-*

* " Rhetoric," B. ii. c. 24

† Ibid. B. iii. c. 18.

clusion, as to the bold assertion of false premises, and thence arguing fairly to a false conclusion. This is a great and fundamental fallacy, common to writers on every subject, who have some interested purpose or tenet to establish, and accommodate with principles, or an hypothesis, ingeniously fitted to their end. In this there is a *petitio principii*, or begging of the question, and arguing in a circle, which is not seen, nor always used with design, but often with great simplicity and sincerity.

871. As all confutation of argument ends in establishing truth, or reducing the argument to absurdity, and as absurdity is ridiculous, there is established thereon a mode of Sophistry, the ground of which is, that as ridicule is founded on absurdity, so may the absurdity of any question be established by *ridicule*. But this argument itself is absurd, and ridicule is essentially ridiculous in logic, having no pretension to reason, and being founded altogether on the sensual regard to laughter and contempt; and, if it be at all logical, it is the medium between reason and force, hardly a lawful remove from the logic of the fist, and preferable only as less violent, and little less degrading.

872. *Ridicule*, which throws the mind off its balance, as laughter and intoxication do the body, is, in an argument, principally allowable against itself; it being fair, in all contentions, to turn the delusive and unlawful weapons of assailants against themselves, whether they be instruments of ridicule,

scurrility, irony, or iron; and although "truth may bear all lights," as Lord Shaftesbury has asserted, yet will it take the colour of the light thrown upon it; and ridicule may cast upon truth a gleam of the ridiculous, although it cannot penetrate to destroy it. And although, like the diamond, truth is not injured by casting dirt upon it, it may nevertheless be thereby soiled and obscured. The use of such weapons, in serious and honourable contest, is therefore the mark of a degraded and undisciplined mind, indigent of lawful instruments, and unskilled in exercise.

873. The proper matter or object, and correlate of the *Ridiculous*, is the *Absurd*. The Absurd is the irreconcilable, being without ratio or relation. If the object be sensibly Ridiculous or Absurd, it provokes Laughter. Hence the Sophist turns Laughter or Ridicule to logical account, by putting the Effect for the Cause, and therefrom inferring *Absurdity*. But this is in effect a *petitio principii*—a trick proving nothing—a logical weapon of folly and falsehood.

874. Satire is an illegitimate Logic of this kind, that confutes by debasing and confounding; and, however keenly sarcastic, or humorously witty, it produces neither logical conviction nor honest sympathy, and we may thus address him,—

Who prone to satire, soon has cause to know
The ball that strikes a ball receives a blow;

And true the law in nature—morals—art—
For satire still re-acts upon the heart :
You say 'tis proper punishment of evil ;
But who'd be executioner or devil ?

875. Nevertheless, there is an appropriate use of ridicule, in reproof of the palpable follies of mankind ; nor can there be any just objection against the limited use of mock argument, which negates itself, for the purpose of wholesome satire, in correcting of those vices and errors, which neither reason nor lawful authority are allowed to reach.

876. When strong prejudice falls upon argument, reason and ridicule are equally unavailing ; and as in all false argument there is some prejudice, the fairest, least offensive, and perhaps the most efficacious mode of *confutation*, is, in the method of concession, to grant the false positions and premises of the disputant, and to urge them to extremes, which never fail to terminate in absurdity : more vehement attacks are eluded, by this *reductio ad absurdum*, and the antagonist falls by his own weight and impetus. There is also sometimes a cutting and powerful reproof of this kind in *silence*.

877. These exemplify the *argumentum ad hominem*, which employs an opponent's own arguments, and turns a man's weapons upon himself, when the *argumentum ad judicium* is rendered useless by prejudice, on the one hand, and the *argumentum baculinum*, or knock-down argument,

might be as dangerous as it is totally illegal, on the other : and these are the three celebrated and sole simple forms of natural disputation, as sensible, intellectual, and physical, from which others are deduced or compounded.

878. As to controversial and contentious arguments, there can be no such things when words and terms are rightly understood, the premises truly laid, and the consequents justly deduced. To these objects, dissidents should direct their attention ; for truth and justice cannot fail to agree but through want of knowledge or understanding, or of sincerity and honesty in the litigants.

879. And as to scholastic tilting, wrangling, and debate, in particular, they are mere logodædaly and quibble, or a war of words ; which, though affecting to employ reason, puts the winning of the game or victory in the place of truth, and is altogether sensual, unknown to true philosophy, unworthy of the logician, and may be properly consigned, with all the logic of sophistry, factious clamour, and special pleading, to the abusers of reason at the hustings, the rostrum, and the bar.

880. The most common Sophistry, as well as the most seducing, is that which appeals to the passions, affections, and tastes of men, which addresses their hopes, fears, or interests, as ethical writers and orators, moral, political, and religious, do ; or even the *Senses*, as all do who put glowing, flowing, graceful, harmonious language to the ear,

and figures to the imagination in the place of *Reasons*, and substitute a fine Style for just and legitimate Argument ; for these, however eligible as literary aids, are neither logical nor philosophical. Appeals to Common Sense, Opinion, and Prejudice, in matters of reason and fact, are also grossly sophistical and beneath the logician.

881. There is not a more sophistical conduit to error than the natural proneness of men to run to extremes, regardless that truth is relative, and consists in a concurrent mean between erroneous extremes ; whence the correct maxim, that *the opposite of truth is falsehood*, is converted into a perverse maxim, that *the opposite of falsehood is truth* ; but Unity is the attribute of Truth, as Duplicity and Diversity are of Falsehood and Error ; and as Falsehood is usually an Extreme, so is its opposite commonly another extreme, a second Falsehood ; whence it is a rule of Logic, that *contrary judgments, though they may be both false, cannot be both true*.

882. Hence we seldom fail to attain Truth by taking the side of an opponent, according to *the method of concession* before adduced, and pushing the question to its utmost extreme. If it gain strength thereby, we may acknowledge ourselves wrong ; it will otherwise run into absurdity, and prove that we were right. We thus relinquish opposition to become acceptable partisans to the ear of our adversary ; in which way we seldom fail to

attain a due limitation or true mean that settles a party question.

883. Of sophistical dialectics, the autological assertion is the extreme and weakest. It is the royal argument, is imperial, and employs imperative judgments, and belongs to the Logic of the Will, of which we have before spoken. It is the royal road of Logic, and, like all the royal roads of science and art, is the easiest and most sought, though it leads to nothing. James II. "*asserted a proposition*, and as often as wiser people ventured respectfully to shew that it was erroneous, he *asserted it again in the same words*, and by so doing conceived he had at once disposed of all objections." Some have called it the *lady's argument* ; and "Marlborough said Queen Anne, who practised it, had learned it from her father ;"* but it is far from exclusively feminine and royal.

884. There are other fallacious arguments, which are admitted nevertheless for expedience. Thus if you argue with a Lawyer about *justice*, he may answer you by an *act of parliament* ; and if you argue with a divine of the *truth of religion*, he may reply to you from *the Scriptures* ; or urge law to a *military despot*, and he may answer you with the *sword* : neither of which is to be disputed, and each of whom, where allowed, will settle the argument by *physical force*. But in a free state of

* Macaulay's "Hist." vol. ii. p. 62.

mind and body, men will acknowledge and submit only to true logical authority, which is that of Reason and God.

885. As to him who mistakes either laugh, smile, sneer, sarcasm, satire, scorn, pun, irony, contempt, rallying, ridicule, epithet, declamation, or eulogy, rank, riches, pedantry, or authority, assumption, invective, interrogation, contradiction, or assertion—either or any of these, or similar sensual forces—for argument or confutation, he is but a sorry and contemptible logician; while he who disingenuously resists truth and just argument is not merely a bad logician, but is dangerous, and not to be trusted.

886. As *confounding of the question* by legal epichirema, long discourse, or otherwise designedly, is one of the endless subterfuges of sophistry; it should be kept in mind in all sincere argument, whatever be the mode employed, that there is a unity of truth and reason which is best promoted by simplicity: hence, there is in every case a best argument; and whatever is urged beyond it does in general but embarrass and enfeeble the question, often leaving that obscure in the end which was clear at the commencement.

887. We have already enlarged, unnecessarily perhaps, upon the accidents of Logic; and to treat further of the *resolution of sophisms*, the many arts of proof and confutation, and the variety of topics,

is altogether needless to our design, they being also amply discussed in many principal works of the Logicians.*

CONCLUSION.

888. The main design of the foregoing outline of the logical sciences being to exhibit *analogism* as the prime organ of reason in the evietion of truth universally, and to vindicate *reason* as the presiding faculty and authority throughout Logic and Philosophy, should it seem that we have too zealously invested reason and analogism with unwarranted or misapplied powers therein, a brief retrospect of its principles may serve to justify our positions and objects.

889. Inquiring into the nature and office of *reason*, we have seen that it is amenable to *consciousness*, and that consciousness is of triple reference, being either of *sense* which is Physical, of

* See Aristotle's "Soph. Elenchi;" Stier's "Præcepta Doctrinæ, Logicæ," &c.; Tract. iii. cap. i. ii. and iii.; Wallis's "Institutio Logicæ," cap. xx.; "Aldrichii Logicæ," lib. ii. cap. i.; Whately's "Logic," cap. iii.; G. Bentham's "Logic," cap. xv.; Mill's "Logic," Book v. &c. The logic of deception is also treated on almost exhaustively in Aristotle's "Rhetoric," Books ii. and iii.

reason which is Logical, or of *faith* which is Ethical [344]: but physics, logic, and ethics comprise the Philosophic universe. *Consciousness* regarded Logically is also of like triple reference subjectively—to Conception, to Conviction, and to Conscience—in objective regard to physical *facts*, logical *truths*, and ethical *goods*; and these in conjoint reference to conceptions of sense, convictions of reason, and to faith of conscience.

890. It is apparent hence that the triple ground of conscious reliance is *conceptions* of external facts, internal *convictions* of truth, and practical *conscience* of good; which latter is the end of all thought and practice, moral, political, and religious, and the final object of faith and conscience.

891. In this triple reference of consciousness to the external facts through sense and conception—to medial truths through conviction of reason and understanding—and to internal and moral goods through will and conscience or faith, *reason* is the presiding authority in triple alliance with *faith* and *facts*; for faith is subject to be influenced by fancy or *imagination*, and facts are liable to all the defects of *memory* and misapprehensions of sense, while *reason* or relation is invariable according to that universal analogy, wherein pure intellect identifies all faculties and energics.

892. It results, therefore, as both correlate and corollary, 1, that the appeal of intellect is of triple regard, whereby facts lead to truths and truths to

good ; 2, that *facts* are incredible when opposed to truth and reason, and *truths* are untenable that are opposed to faith of conscience and *good*, although in their integrity these three agree in unity of intellect and end ; and 3, that good is of higher regard and purpose individually than truth, and truth of more authority than facts ; but that in the disagreement of either we have ground for suspense.

893. We have cause, therefore, to doubt convictions that are against pure conscience, and to doubt conceptions of sense that are against convictions of reason ; as we have to yield facts in all cases to truth and every thing to good. Finally, in no case ought we to subvert certain good for the sake of apparent truth, nor to avert certain truth in favour of sensible things ; for truth and fact are subordinate to good, and there is ever something erroneous and wrong when fact, truth, and good do not harmonise ; or, in other words, when ends are not justified by reason and fact, or reason and fact fail to educe *good*. There is thus unity of the Logical and Philosophical—of the Noological or subjective, with the Physiological or objective Systems of the Universe, which it should be the ultimate aim of logic and philosophy to establish ethically.

894. Evident and admitted as such universal unity is, it is nevertheless of difficult developement and conception ; or, being conceived, is of infinitely greater difficulty to convey to other minds through

the entangled medium of language—to say nothing of *that natural imperfection of things which is the principle of their union* ; for, since imperfection in anything is *want of, or dependence on*, something else, imperfection must be an essential condition throughout the natural universe, whereby its parts and particulars are commutually supplied, connected and continued by its All-sufficient Author in one universal, dependent, and perfect whole.

895. Much more, then, does imperfection belong to the *works* and doings of men, who are dependent parties only of the creation, in want of all things, and in whose practice, accordingly, perfection is unattainable, although every *art and practice* has *good* for its end and aim. And if in their *reason*, the object of which is *truth*, men have higher pretension to perfection than in practice, it is a perfection *theoretic and speculative* only. Hence the aim at good should not be an aim at *perfection*, but at *improvement or melioration* : and the world is finding this out.

896. We trust, therefore, that we have neither assigned undue authority to the logical faculties, nor misapplied their powers ethically ; for, in a time when *rights* are held paramount to *duties*, and *right of truth* is made to precede *right of good*, it is important that a work bearing on these questions should not be misunderstood through the inadequacy of its details ; for which we have little hope of approbation, and look for its objects only

to the natural development of the logical intellect, and the growing powers of the analogical organ.

897. Our next attempt will be to apply the Logic of Analogism to the extension of our Outline of Ethics, as that branch of universal science to which it is most purely and especially related, and of most general interest and importance, including Morals, Politics, and Theology.

THE END.

INDEX.

The numbers refer to those of the Paragraphs.

- ABSTRACTION, act of reason, par. 454, 457, 464
Absurdity, falsely inferred, 873 ; a test of fallacy, 876
Abuses of reason, 871, 879, 867
Accentuation, [150](#), [167](#), 209
Advocacy, 867
Æsthesia, 740
Alfred the Great, the assertor of freedom, 664
Alliteration, [148](#), 262
Alphabet, characters of, [103](#) ; Magogian, [126](#) ; analysed, [103](#) ;
the greatest of human inventions, [144](#)
Ambiguity, [192](#), 858
Anachronism, 847
Analogism, parity of reason, [60](#) ; a logical organ, 486 ; uni-
versal, 641, 659, 502, 511, 541, 560, 768, 606 ; theolo-
gical, 531, 640 ; misuse of, 532 ; it and induction
slighted by logicians, 533, 558, 575, 713 ; its boundary,
537 ; principle of, 540, 560 ; its fallacies, 543, 557 ;
defined, 561 ; the foundation of logic, 562, 604 ; distri-
buted, 607 ; distinguished, 610 ; illustrated, 611, 617 ;
categorical, 612, 616 ; axiomatic, 621 ; the true method
of art, 641 ; its construction, 638 ; discursive, 660 ;
powers of, 675 ; final, 826
Analogists : Pythagoras, Plato, Copernicus, Kepler, Columbus,
Newton, 671
Analogy, [60](#) ; of letters, [122](#), [133](#), [141](#), [146](#) ; of words, [164](#),
[216](#) ; of signification, [172](#), [210](#), [215](#) ; grammatical, [216](#) ;

- of language, [219](#); logical, [264](#), 656; poetic, [267](#); rhetorical, [269](#), 509; intellectual, [339](#); universal, [413](#), 478, 500, 510, 528, 599; of wit, 437; powers of, [435](#); of the faculties, 460; of truth and light, 461; of body and mind, 477, 507; philosophical, 514; true and false, 522, 557; of organs, 526; use and neglect of, 538; ancient, 540, 544; modern, 545; abuse of, 550; legal, 551; religious, 549; geometrical, 559; of sense, 667
- Analysis and Synthesis, 711, 801; terms misemployed, 830
- Anomaly the antagonist of analogy, 557
- Antanacsis, [223](#)
- A priori* and *à posteriori*, 769
- Arabian logic, [29](#)
- Argument, scope of, 723, 748
- Argumentum*, 872; *ad hominem ad judicium: baculinum*, 877
- Aristotle the prince of logicians, [25](#); his *Organon*, [67](#); his *Logic*, 686; mathematical, [72](#), 677; his *Philosophy*, 678
- Art advanced by liberty, [2](#); Egyptian, Grecian, [2](#); useful, 635; fine, 632
- Articles, [185](#); logically distinguished, [186](#); categorical, [193](#), [196](#); logical powers of, [197](#)
- Articulation, [135](#)
- Association, mental, [414](#), [416](#), [422](#)
- Attention, [368](#), 475; is a habit, 476
- Attributes, [199](#), [230](#)
- Authority, logic of, 683
- Autonomy, republican, regulated, [8](#)
- Auxiliary verbs, [194](#); categorical, [195](#)
- Axioms, logical, 563, 656, 815, 820, 823
- Bacon, founder of modern logic, [29](#), [43](#); his *Induction*, [32](#), 789; his followers, [41](#); his reform, [43](#); his *Organ*, [51](#); his logical writings, [76](#), 849; his conformable instances analogical, 665
- Barrow, Dr. a great logician, [50](#), 651
- Being, category of, 596
- Blood, Harvey's doctrine of, finally demonstrated, [35](#)
- Brown, John, a disciple of Harvey, [36](#)
- Brown, Bishop, an analogist, [50](#)
- Butler, Bishop, an analogist, [50](#)

- Cæsar's treatise *De Analogia*, [28](#)
 Canon, of Epicurus, [27](#) ; of truth, 505 ; logical, 515
 Categories, grammatical, [170](#), [181](#) ; the basis of logic, 578 ;
 Aristotle's analysed, 580 ; whence derived, 601
 Categorical, unity, [198](#), 589, 602 ; argument, 603, 616
 Cause, analysis of, [352](#), [354](#), 595, 620, 624, 639
 Characters, symbolic, [97](#) ; Chinese, [98](#) ; alphabetical, [103](#) ;
 figures of, [136](#) ; compound, [139](#) ; universal, [143](#) ; mute,
 [149](#) ; Mexican, [98](#)
 Cheyne, an analogist, [50](#)
 Christianity, the only logical religion, [20](#) ; purified or corrupted
 with logic, [21](#)
 Chronological method, 846
 Compensation, universal, [10](#)
 Composition, literary, [229](#), 642 ; chemical, 643
 Computation, logical, 721
 Conception, [344](#)
 Concession, logical method of, 840, 876
 Conclusion, logical, 564, 700 ; categorical, 605 ; analogical,
 614
 Confutation by concession, 876
 Conscience, liberty of, [7](#) ; its relations, 889 ; the foundation of
 faith, 890, [344](#), [346](#)
 Consciousness, [342](#) ; defined, [344](#) ; universal, [346](#) ; analogy of,
 [347](#) ; triple, [389](#)
 Consonants, [131](#)
 Construction, [229](#), [235](#) ; logical, [247](#) ; mechanical, [248](#) ; rule
 of, [250](#)
 Controversy, [48](#), 878 ; ethical, 627 ; resolved, 634 ; fallacy of,
 865 ; law of, 866
 Conviction, modes of, 498 ; analogical, 502, 517 ; logical, 566,
 714, 822
 Copernicus's system, 671
 Correlation, universal, [338](#)
 Credulity, vacillating, [16](#) ; dogmatical, 503
 Creeds, [16](#)
 Criticism, [292](#), [323](#), 634
 Debate, rules of, 866
 Deduction, 791

- Definition, [240](#); logical analogy of, [241](#); classed, [242](#), [243](#)
 De Jurain, a generalogist, [51](#), 766
 Deliberation, [360](#), [368](#)
 Demonstration, modes of, 568
 Dialectics, [388](#), 482; of Zeno and Plato, 665; misapplied, 773;
 popular, 824
 Diction, [287](#); analogy of, [288](#)
Dictum de omni, et nullo, 699, 704
 Digby, [41](#); his logic, 718
 Dignity, 664
 Diphthongs, [128](#)
 Discipline, primary, [93](#), [403](#)
 Discourse, [229](#); elements of, [251](#)
 Discoveries through analogism, 630, 633
 Discursive analogism, 660, 674
 Dispute, resolved, 634
 Dissection of the syllogism, 695
 Distinctions, logical, 701, 836
 Division, rules of, 835
 Dogmatism, 503; resolved, 623

 Education, logical, incumbent, [19](#); order of, [93](#)
 Egyptian, arts of, 1; hieroglyphs, [100](#); learning, [103](#)
 Election, faculty of, [367](#); logical, [370](#); analogy of, [372](#)
 Ellipsis, [156](#), [233](#); logical, 692
 Elocution, [272](#); evils of, [313](#)
 Emphasis, [151](#); not accent, [197](#)
 Empiricism, logical, 647
 Energies, logical, 468; analogy of, 471
 English language, excellence of, [105](#); analogy of, [213](#)
 Enthymeme, 602
 Epichirema, 886
 Epicurus's logic, [27](#)
 Eregina, 594
 Ethics, [627](#)
 Etymology, logical, [87](#), [221](#); of letters, [145](#); philosophical, [222](#)
 Euphony, [131](#)
 Evidence, of reason, 769, 776; of sense, 769
 Existence, category of, 589, 591

Ex-parte logic, 748

Expectation, antagonist of memory, 427

Experimentalists, eminent, 51

Faculties, of the mind, 391; analogy of, 396, 460; subordination of, 402, 404; discipline of, 403; balance of, 412; commerce of, 474

Faith, of reason, 13, 18; of conscience, 891; analogy of, 548

Fallacies, 850, 852; detection of, 706, 856; solution of, 859; analogical, 860; legal, 868

False views of logic, 825

Fiction, 301, 312

Figures and modes, principle of, 697, 728

Final analogism, 826

Forms, of Bacon and Kant, 55, 762

Freedom—*see* Liberty

Genders, 176

Genealogies, analogous, 666

Genera, universal, 821

General logical scheme, 795

Generalism, or induction, 483, 741, 764; illustrated, 778; categorical, 794; formal, 799, 805; analogical, 811

Genius, 435; inspired, 466, 633

Genus and species, relations of, 793; universal scheme of, 795

Geometry, analogy of, 632, 651, 654

God, antient names of, 145

Good, practical, 895; paramount to truth, 22, 892

Grammar, logical, 73, 207, 211; rules of, 130; defined, 162

Greek language analogous, 213

Harmonic relations, 122, 147, 282

Harvey, inductive discoveries of, 33; their coincidence with Newton's, 34; his method, 37, 75; his anastomosis demonstrated, 35; an Hippocrates, 40; his analogism, 545; his circulation, 636; his defence of induction, 773

Hieroglyphics, 103

Hippocrates, eulogium on, 40

Hobbes, a disciple of Bacon, 41

Human figure, analogy of the, 632

Hyperbole, [268](#)

Hypothetical analogism, 642

Idealism and materialism reconciled, 622

Ideas of Plato, 762

Identity, logical, 719; of terms, 719, 724; of propositions, 720; of syllogism, 727

Illation, 565; universal rules of, 716

Imagination, [393](#), [400](#), [428](#); analogy of, [430](#); Shakspeare's, [429](#); dangers of, [428](#), [431](#); its office, [434](#); its powers, 441, 443; logical, 444

Imperfection a principle of union, 794; hereof, [76](#)

Induction, 780; of Plato, Socratic, [24](#), 760; of Bacon, [32](#), 534, 749, 759, 770; slow progress of, [51](#); its defects, [52](#), 782, 786, 818; analogical, 645, 784; writers on, [766](#); universal, 775; illustrated, 778, 781; principle of, 783, 787; complex, 788; of classes, 794; formal, 799, 805; limits of, 816

Inference, 565; principle of, 569; analogical, 614; rules of, 716

Instinct, 465

Intellect, triune, 452

Invention, [435](#), 544; art of, 630, 633; patents for, 635, 636; of logic, 764

Jones of Nayland, an analogist, [50](#)

Judgments, [225](#); compound, [228](#); extremes of, 463; universal, 472; formation of, 497; logical, 700

Kant's philosophy logical, [53](#); noology, [54](#); his system, [55](#); apparent defects, [56](#)

Kepler's harmonic analogies, 671

Knowledge, of triple relation, [107](#)

Lady's argument, 883

Language, dignity of, [79](#); variety of, [80](#); universal, [81](#), [104](#), [106](#); analogy of, [84](#); the English universal, [105](#); its subject, [108](#); of nature, [109](#); of art, [110](#); its object, [111](#); spoken and written, [112](#); how variable, [113](#), [219](#); its logical relation, [115](#), [118](#); elements of, [116](#); symbol of, [117](#); permanence of, [184](#); its structure, [211](#), 464

Laughter, 438

- Law, logical, [7](#), [12](#), 516, 700, 817
- Learning, cherished by religion, [1](#) ; false position of, [85](#)
- Lectures, teaching by, [95](#)
- Leibnitz's principles, 520
- Lenses, [631](#)
- Letters, origin of, [96](#) ; progress of, [98](#), [120](#) ; vocal and visual, [121](#), [123](#) ; harmonic, [122](#), [147](#) ; mute, [134](#) ; elementary forms of, [138](#) ; geometrical, [141](#) ; coincident in figure and sound, [141](#)
- Liberty, perfective of art, [2](#) ; coincident with logic, [3](#), [6](#) ; how licentious, [5](#) ; how regulated, [7](#) ; Milton its champion, [9](#) ; elicits law, [10](#) ; Christian, [20](#) ; Divine, 664 ; and necessity, [353](#)
- Locke, a principal follower of Bacon, [41](#) ; his association of ideas, [420](#)
- Logic, [386](#), 525 ; coincident with liberty, [3](#), [6](#) ; the criterion of truth and right, [7](#) ; perfective of law, [12](#) ; of faith, [13](#) ; defined, [69](#) ; its importance, [15](#) ; its rise and progress, [24](#) ; modern, [42](#) ; deficient as a whole, [59](#), 512, 747 ; coincident with philosophy, [53](#), [54](#), 767 ; its basis, [65](#) ; is a discipline, [67](#) ; its extent, [69](#), [300](#), 537 ; of authority, [364](#), 884 ; false, 748, 885 ; terms of, [171](#) ; philosophical, [244](#), [246](#) ; of sense, [385](#), 507 ; faculties of, [387](#), [391](#) ; of party, 748 ; abuses of, 752 ; founded on analogism, 574 ; scholastic and extra-scholastic, 677 ; Aristotle's, 680 ; neglect of, 741, 745
- Logicians, failures of, [49](#) ; celebrated, [50](#) ; cautions to, [191](#)
- Logos of truth, [13](#)
- Lunacy, [429](#)
- Macrocosm and Microcosm, analogy of the, [34](#)
- Man, figure of, illustrated, 632
- Material generalism, 796
- Materialism and idealism reconciled, 622
- Mathematical analogy, 651 ; reasoning, 733 ; logic, 734
- Mathematics, analogical, 628
- Maxims, logical and philological, [200](#), 823
- Memory, [392](#), [399](#), [405](#) ; acquisitive, [406](#) ; training of, [408](#) ; artificial, [414](#) ; capacity of, 425 ; its riches, 426
- Mesology, the science of science, [336](#)
- Metaphor, [268](#)

- Method, 827 ; analytical and synthetical, [89](#), 831 ; of Aristotle, [89](#) ; Socratic, [370](#), 839 ; of nature, 828 ; antithetical, 832 ; distinguished, 832 ; of teaching, 833 ; Logic of, 834, 837, 839 ; analogical, 838 ; of concession, 840 ; rules of, 841 ; experimental, 843 ; chronological, 846
- Metre, [152](#)
- Mill, Mr. J. S. a generalogist, [50](#), 766
- Milton's logic, [9](#)
- Mind, science of, [330](#) ; analogy of, [335](#), 445 ; synopsis of, [337](#) ; universal, [342](#)
- Mnemonics, [414](#) ; Pythagorean, [415](#)
- Modern logic, [43](#) ; its influence, [44](#) ; its failure, [45](#)
- Modes of thought, [398](#), 454, 491 ; of demonstration, 568 ; logical, 697
- Moods of verbs logical, [180](#)
- Mutation of language, [189](#), [202](#)
- Mute letters, [134](#), [149](#)
- Mystery, [433](#)
- Necessity and liberty correlate, [353](#)
- Negation and affirmation, [205](#)
- Neology, [218](#)
- Newton's experimental induction, [34](#) ; an analogist, 546
- Nomenclature, scientific, 220
- Noology, Kant's, [54](#) ; science of mind, [300](#) ; basis of logic, [331](#) ; analogy of, [333](#), [341](#)
- Nouns, logical distinctions of, [182](#)
- Novum Organum* of Bacon, [51](#), [78](#), 649, 749 ; deficient, 757
- Object and subject, 889 ; logical, 566, 597
- One-sided logic, 748
- Ontology, ground of noology, [334](#) ; the science of being, [336](#)
- Operations, logical, 479
- Optics, analogy of, 631
- Organs of Logic adapted to knowledges, [61](#) ; are instrumental powers, [62](#), 479, 481 ; three, 483 ; distinguished, 488 ; misapplied, 494 ; compared, 499 ; reciprocation of, 492, 501, 679, 771, 812 ; subordination of, 732 ; their powers, 814
- Ornament, technical vices of, [320](#)
- Orthography, [161](#)

- Parenthesis, [156](#), [231](#)
 Parmenides, inventor of dialectic, [24](#)
 Participle, [175](#), [203](#)
 Particles, [181](#) ; categorical, [204](#)
 Pedantry, [317](#)
 Pedigree analogous, 666
 Percolator, 636
 Perfection, unattainable, [75](#), 895 ; its principle, 894
 Personification, [268](#)
 Perspicuity, principle of, [249](#) ; its value, [315](#)
Petitio Principii, unintentional, 870
 Philology, logical, [73](#), [77](#), [249](#) ; universal, [78](#), [106](#) ; relation of, [83](#) ; the first discipline, [88](#), [92](#)
 Philosophy and logic correlative, [11](#), [64](#), [74](#), 598, 618, 625, 767 ; the basis of logic, [65](#)
 Phrenesis, [428](#)
 Physics, logical reform of, 750, 760 ; induction of, 803
 Physiology greatly advanced by Harvey, [33](#), [36](#)
 Plan of this work, [75](#)
 Plato's logic, [24](#), 665, 760 ; ideas, 762
 Poetry, [275](#), [284](#)
 Powers, instrumental, [62](#) ; of English language, [105](#) ; of words, [165](#), [197](#) ; of the verb, [178](#) ; logical, [197](#), [362](#), 675 ; intellectual, [336](#) ; of imagination, 441 ; of analogy, 455, 646 ; of reason, 490
 Practical analogism, 642
 Predicables of Aristotle, [191](#)
 Predicaments, 580 ; post, 593
 Prejudice, [362](#)
 Premises, logical, 530 ; false, 863, 870
 Principle, of sufficient reason, 519 ; of identity, 520 ; of unity, 523 ; of syllogism, 693, 697
 Principles, recapitulated, 889 ; Leibnitz's, 520 ; first, 524 ; of syllogism, 693, 697
 Propositions, grammatical and logical, [225](#), [227](#), 495 ; classed, [236](#) ; analogy of, [237](#) ; conversion of, [239](#) ; imperative, [364](#)
 Prose, [284](#)
 Prosody, analogical, [283](#)
 Punctuation, [153](#) ; rhetorical, [159](#)
 Pythagorean mnemonics, [415](#)

Quadrivium of the schools, [94](#)

Question, confounding of the, 886

Ramus's reform of logic, [29](#), [30](#), [9](#)

Reason, [377](#); faculty of, [394](#), [401](#), 447, 456; logical, 462; instinct, 465; Divine, 467; analogous, 571

Reflection, [361](#)

Reform of logic, [43](#), [47](#), 534; political, [8](#), 895

Relation, logical, 527; matter of knowledge, 556; universal, 588, 591; distinction of, 613; complex, 668; of genus and species, 793

Relative terms logical, [187](#)

Religion, nurse of learning, [1](#); essentially logical, [13](#), [20](#)

Resolution of sophisms, 859, 887

Rhetoric, [252](#); extent of, [254](#), [270](#); its abuses, [258](#); Aristotle's, [261](#); intermediate to logic and philology, [260](#); figures of, [268](#); analogy of, [269](#), 661; logical, [262](#), [270](#)

Rhetorical analogy, 577

Rhyme, [279](#)

Rhythm, [276](#)

Ridicule not logical, 871; when lawful, 875

Right, of truth, and good, 896

Rights of man, theoretical and practical, 895

Roots of language categorical, [188](#)

Ross's telescope discovery, [35](#)

Rules founded on analogy, 518, 842; of logic, 699; categorical, 820; of division, 835

Satire, false argument, 874

Scepticism, 504; resolved, 623

Scheme, of vowel sounds and figures, [123](#); alphabetical, [133](#); universal, [338](#); of genus and species, 795; of syllogism, 695

Scholastic fallacies, [46](#); logic limited, 681

Science, early, [2](#); analogy of, [336](#), 629; of unity, 525

Semiotics, [158](#), [160](#)

Sense, logic of, 657, 667, 739

Sensual, true signification of, [10](#); analogism, 658

Sentences, compound signs, [225](#)

Shakspeare, a scholastic reformer, [30](#); on imagination, [429](#), 436; on reason, 467

- Signification, analogous, [265](#), [278](#)
 Signs, logic of, [137](#); rhetorical, [265](#)
 Similitude, analogy of, 678
 Socratic induction, [24](#), 764
 Sophism, resolution of, 859
 Sophistry, 852; art of, 861; legal, 867; its scope, 853; source of, 857
 Sophists, incited logic, [25](#)
 Sorites, 691
 Sound, expression of, [263](#)
 Space and time, analysed, 626
 Style, [286](#); analogy of, [288](#), [294](#), [319](#), [324](#), [307](#); religious, [290](#); poetic, [293](#), [295](#); historic, [297](#); philosophic, [300](#); Aristotle's doctrine of, [306](#); pure, [309](#), [328](#); its excellence, [315](#); perfection of, [318](#); vices of, [320](#), [327](#)
 Subject, and object, [389](#), 595; and predicate, 806
 Subordination, logical, 529, 683, 732; political, [6](#); of organs, 732, 819
 Syllogism, 485, 738; mathematical, 733, 679; its office, 686; exemplified, 687; analysed, 690, 694; dissected, 695; analogical, 698, 707, 712, 726; rules of, 699; varieties of, 709, 730; sophistical, 708; its limits, 715; philosophy of, 718; its construction, 720; useless subtleties of, 729
 Symbols, logical, [245](#), 663
 Synonymism, [223](#)
 Syntax, [224](#)
 Synthesis and analysis, 711
 Tatham, an analogist, [50](#)
 Teaching, 833; by lecture, [95](#)
 Technical logic, 705
 Teleology, the science of art, [336](#)
 Terms, logical, [171](#), 689; convertible, [173](#)
 Test, logical, 704
 Theological organ, 531, 548
 Time and space, 582, 626
 Topics, 848
 Trains of thought, [417](#)
 Triads of Bardism, [418](#)
 Triplicity, noological, [380](#); of consciousness, 889; of intellect, 892

- Triunity of mind, [378](#), 452
- Trivium of the schools, [70](#), [94](#), [273](#), [329](#)
- Truth, tested, [14](#); subservient to good, [22](#), 896; logic the science of, [23](#), [329](#), 725; degraded, 872; contrasted, [300](#); logical, [311](#), 449; poetic, [314](#); search of, [381](#); analogy of with light, 461; unity of, 521; analogical, 553, 555, 567, 572; phases of, 573; its end, 822
- Tycho Brahé, 671
- Understanding, explained, [373](#); according to usage, [374](#); powers of, [378](#); its relations, [379](#); complexity of, 451
- Uniformity of nature, analogical, 669
- Unity, a universal principle, 523, 893; of mind, 459, 474; logical, 525, 571, 573
- Universal, logic, [59](#), [69](#), [76](#); analogy, [413](#)
- Universals, logic of, 486, 513, 579, [67](#)
- Universe, a logical whole, [266](#), [413](#), 510
- Verb, the, [176](#); its powers, [178](#); construction of, [202](#)
- Volition, [349](#); correlation of, [351](#); defined, [352](#); ethical, [355](#); relation of, to art, [356](#); logical, [357](#); analogy of, [359](#)
- Vowels, analysed, [123](#); primary, [124](#); Aristotle's distribution of, [125](#); ancient British, [126](#); Grecian, [127](#); secondary, [128](#); variable, [129](#)
- Wallace, Dr., distinction of sounds, [133](#)
- Whately's, Bishop, logic, [50](#)
- Whewell, Dr., induction of, [52](#), 766
- Will, defined, [352](#); correlation of, [350](#); freedom and necessity of, [353](#); active and passive, [354](#); powers of, [359](#), [362](#); logical and moral, [366](#); blind, [383](#); logic of, [384](#)
- Willis, Dr., on Harvey's logic, 750
- Wit, analogy of, 437
- Words, composition and relation of, [163](#); analogy of, [164](#); how significant, [165](#); logical powers of, [166](#), [181](#); affinity of, [168](#); distinguished, [169](#); relative, [174](#); terminals and prefixes of, [201](#)
- Wrangling, [48](#), 879
- Zeno Eleates, the inventor of logic, [24](#), 665

OTHER WORKS OF THE AUTHOR.

TRITOGENEA;

OR,

A SYNOPSIS OF UNIVERSAL PHILOSOPHY.

New Edition. Octavo.

OUTLINES OF ANALOGICAL PHILOSOPHY.

Being a Primary View of the Principles, Relations, and Purposes of Nature, Science, and Art, in which the Sciences are systematised and harmonised with Nature and Art universally. 2 vols. 8vo.

CHROMATICS;

OR,

THE ANALOGY, HARMONY, AND PHILOSOPHY OF COLOURS.

A New Edition. Octavo.

THE SAME. Former Edition, with large coloured Diagrams. Royal Quarto.

CHROMATOGRAPHY;

OR,

A TREATISE ON COLOURS AND PIGMENTS, AND OF THEIR POWERS IN PAINTING.

An improved Edition. 8vo.

GRAMMAR OF COLOURING;

OR,

RUDIMENTS OF THE PAINTER'S ART.

12mo.

᾽Ο ΛΟΓΟΣ;

OR,

THE WORDS OF CHRIST RECORDED BY THE EVANGELISTS.

Being a Manual for all Christians.

Ready for the Press,

ETHICS;

OR,

THE ANALOGY OF MORALS, POLITICS, AND THEOLOGY.

A New Edition. Octavo.



